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# PreserVenice: Preserving Venetian Public Art

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# PreserVENICE

## Preserving Venetian Public Art

An Interactive Qualifying Project Report  
Submitted to the faculty of the

WORCESTER POLYTECHNIC INSTITUTE

In partial fulfillment on the requirements for the  
Degree of Bachelor of Science

**Submitted by**

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**Submitted on**

December 14<sup>th</sup>, 2007

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## **Abstract**

The purpose of this project was to preserve Venetian public art, a diverse collection of artifacts that is as unique as the city itself. Examining the data collected by prior IQP groups, we agreed on a definition of “public art” that included not only decorative pieces but also structural and functional ones. Our next task was to incorporate missing objects into the database. We systematically searched every public street on the lagoon islands of Burano, Mazzorbo, Murano and Torcello, recording condition data for the pieces found and updating the database with the new information. The result, combined with previous work, was a database of 4376 objects that we considered to be public art. We then ran a new condition analysis algorithm we devised on the entire collection to determine the 50 pieces in most need of restoration.

We laid the groundwork for a nonprofit organization, PreserVenice, dedicated to maintaining the entire collection. PreserVenice, once active, will be responsible for managing the information that has been collected over the years, collaborating with existing conservation groups, acting as an intermediary between donors and restorers, and above all, making public art restoration actually happen.

We also adapted information about public art into two publications, one a chapter in an anthology about the Venice Project Center’s 20<sup>th</sup> anniversary, and the other a brochure to be used as promotional material for PreserVenice. The latter is also accompanied by a website, postcards, and other similar items.



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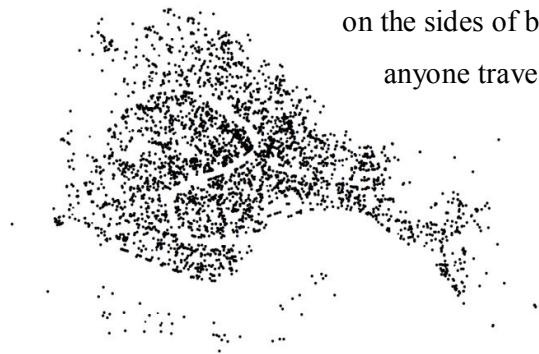
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## 1. Executive Summary

Venice is home to thousands of pieces of outdoor sculpture that span the Baroque, Gothic, and Renaissance periods, many originating in periods when Venice was one of the world's greatest military and mercantile powers. Most of this vast and diverse collection can't be found in the city's many museums and churches, however. Instead, it is public art, located



**Figure 1: All the public art in Venice, 4376 objects so numerous and dense that they define the layout and borders of the city that contains them.**

on the sides of buildings and in public squares, and visible to anyone traveling along Venetian streets and canals. Unlike pieces housed in a museum in controlled environments, public art in Venice is not well-maintained and certainly not appreciated by most who see it. It is, in fact, often ignored and left to the decay at the hands of the destructive effects of nature and deliberate defacement by passers-by. Without restorative intervention, the Venetian history,

mythology, and culture represented in this public art will be lost forever.

Fortunately, WPI students, along with organizations like EarthWatch and individuals like Alberto Rizzi, have conducted surveys and studies to locate and catalog the public art in Venice, information that can be used to help save the collection. Past work has included condition assessments on the state of all objects, gathering data about cracking, vandalism, major structural concerns, and the use of GIS software to document the collection. While past IQP teams collected most of the pertinent information about Venice's public art, there were a



**Figure 2: Conducting condition assessments on a flagstaff pedestal on the island of Murano**

few areas that had not been covered in the surveys, including some of the lagoon islands and certain types of sculpture. Also, this information had yet to be utilized in any part of the restoration process.

Our project helped to fill in the gaps left by past projects and to start the restoration of public art by helping to found a non-profit organization. Since restoration is the ultimate goal, a complete and accurate catalog of all Venetian public art is an important first requirement. We contributed to the current catalog by surveying the lagoon islands of

Burano, Murano, Torcello, and Mazzorbo for mascaroni, portali, wellheads, and flagstaff pedestals, completing the catalog for those islands. Twelve portali and two mascaroni were located on Burano, one mascarone on Mazzorbo, one flagstaff pedestal on Torcello, and 12 portali, three wellheads, and one pedestal on Murano. To help future IQP groups to complete the catalog in Venice and elsewhere in the lagoon, we also produced a comprehensive list of all of the public art that has been cataloged to date.

The next step in the restoration process is to order the pieces of public art in the catalog based on their need for restoration. Using previous work by IQP students and Prof. Carrera, the PreserVenice group created an algorithm utilizing factors like state of conservation, vulnerability, social and historical importance, state of emergency, and artistic value and uniqueness to prioritize the objects. Since the significance of these factors is a matter of subjective opinion, the formula is designed to allow the weighting of each characteristic to be changed to reflect the beliefs of the individual using the system. This formula was then applied to the catalog to produce a restoration priority list. The pieces of public art at the top of this list are those most in need of immediate intervention, and generally were larger, more monumental objects depicting carefully crafted human features, located in visible areas of Venice.



**Figure 3: The logo for PreserVenice, our non-profit organization**

To facilitate and fund the actual restoration, this IQP group laid the groundwork for a non-profit organization called PreserVenice. A website, [www.preserv Venice.org](http://www.preserv Venice.org), was built to



**Figure 4: The PreserVenice website, located at [www.PreserVenice.org](http://www.PreserVenice.org)**

contain information about Venice's public art and the organization itself. Other promotional materials like brochures, a booklet, postcards, and bookmarks were also designed and printed for the organization's use. The brochure and booklet can be used as an informative tool to involved people in PreserVenice, while the postcards and bookmarks can be manufactured in bulk



## 2. Introduction

Art is a fundamental feature of the human condition, enabling humans to express ideas, emotions and creative skills. Every culture on Earth has recognized the value of art as an important contribution to its unfolding legacy. A component of many cultures' artistic heritages is their public art – art belonging to an entire society and thus art that is free for all to enjoy. One can find public art on street corners, the walls of buildings, in public squares, and in thousands of other places in cities around the world. Public art, because of its accessible nature, usually celebrates a society's history, culture, and traditions.

Not surprisingly, then, public art has long been a traditional part of Venetian culture, much of it originating during the Italian Renaissance. At this time in its history, Venice was a noted center for the arts and culture and simultaneously a world naval and trading power. As such a significant player in artistic and political history, Venice has been adored and admired worldwide throughout history. As a result, the loss of its unique and decorative character would be a loss for the world.

The main hindrances to public art restoration are ownership disputes.<sup>1</sup> Most public art in Venice is located on the face of privately-owned buildings, and yet Italian law dictates that the government is the true owner of the art. Consequently, Venetian public art exists in a grey area where nobody wishes (or is able) to claim responsibility for it. Responsibility is passed between the government and building owners. Even within the Venetian government itself, the *Soprintendenze* of Art and of Architecture typically insist that a piece of art in question belongs in the other's jurisdiction. As a result, without an owner and without a caretaker, public art in many parts of Venice is steadily decaying. Conserving the art would help to restore the heritage and culture of a city precariously on the brink of becoming nothing more than a tourist trap, and it must become a priority with restoration groups.

Venice contains thousands of pieces of public art. While past IQP groups have covered many parts of this collection with their efforts, holes will always remain. One such hole was the public art that exists on outlying lagoon islands.<sup>2</sup> There are 35 lagoon islands that have had human inhabitants at some point in the last two thousand years, and with habitation typically comes art in some form. Since some of these islands are quite secluded or actually private, the art on them has not been cataloged. It was not practical to visit all of these islands, but we cataloged art on the four most inhabited and, as a result, accessible:

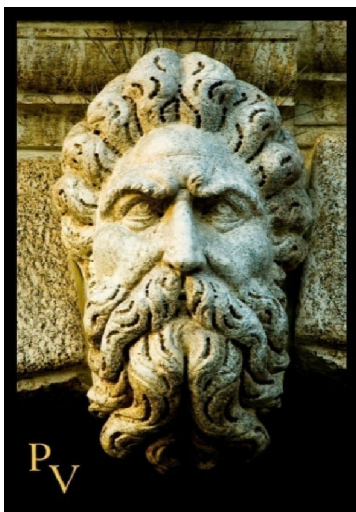
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<sup>1</sup> Typically one would think of an ownership dispute being along the lines of "it's mine," "no, it's mine." In Venice, however, it's usually a case of "it's yours," "no, it's yours."

<sup>2</sup> I.e., the islands in the lagoon that are *not* Venice proper.



Murano, Burano, Mazzorbo and Torcello. To facilitate restoration, we needed an accurate and complete database of all the objects' locations, conditions, and other relevant factors. By adding the data collected on lagoon islands to the existing catalog, we are closer to this goal. Many past IQP groups have conducted restoration priority analysis for the art they catalogued. Unfortunately, however, each group used a different method and formula to estimate these values, which resulted in a high level of inconsistency and certainly



**Figure 6: Postcard**

incompatibility between methods. One of our goals, therefore, was to determine whether a universal method could be found for determining priority and cost of restoration. The answer, we were pleased to discover, was yes.

Finally, we laid the groundwork for a nonprofit organization – PreserVenice. We deemed this organization's existence necessary to implement the proposals created by IQP teams, past and present, and to actually undertake the conservation and restoration process. Our project has also produced outlets for information about public art: a book chapter and a website for our non-profit organization, along with various other promotional materials. By helping with

future documentation efforts and streamlining the preservation and conservation process, we intend to contribute to a lasting effort that will save Venice's public art from its otherwise inevitable destruction.



### 3. Background

Venice is one of the most unusual cities on Earth. It was established in the 10<sup>th</sup> century and is to this day considered to be one of mankind's greatest civil engineering accomplishments. It is an historic city where pedestrians rule, there is more stone than soil, and people travel in boats, not automobiles. However, it is becoming apparent that the slow-paced nature of Venetian life is threatened by the ever-quicken pace of contemporary society.

Venice is endangered. Physically, the wooden poles that support the entire city are sinking into the marsh into which they were driven; this, in combination with rising sea levels, threatens to transform the city into a modern-day Atlantis. Socially, indigenous Venetians are being driven out of the city by factors like an ever-increasing cost of living and the endless influx of tourists that jam the city's streets daily. Commercially, traditional retail stores that provide residents with daily necessities are disappearing, with mask and glass shops that cater only to tourists opening in their place. These are just some examples of the current threats to Venetian daily life.

Venetian culture is in danger as well. The collection of objects that we consider to be "public art" is deteriorating. These are the statues, coats of arms, monuments, inscriptions, wellheads and fountains, just to name a few. Factors contributing to the deteriorating of public art include environmental, biological and human causes but, with the concern of responsible parties, they can all be controlled and alleviated.

#### 3.1 Types of Public Art

The following sections describe the priceless pieces that have helped to define the city since its creation; their loss would indeed be a loss of the heritage of Venice.

##### 3.1 1 *Patere*

*Patere* are the small, typically circular reliefs that dot the sides of buildings throughout Venice. Their shape originates from the way they were made, often sculpted from slices of old marble columns that had been replaced in past renovations of a building. Usually 20 to 80 centimeters across and only eight or so centimeters deep, *patere* exist in six categories: flat, low/medium relief, high relief, curved, *champlevé*, and drilled, named according to their sculptural topography. Flat *patere* are the oldest category. Fashionable in the 12<sup>th</sup> to 14<sup>th</sup> centuries, *patere* were seen by Venetians as superstitious charms that could protect a

household from vice or evil, keeping it at bay. The motifs on *patere* are widely varied, with about 150 different images accounting for the majority of their designs. One very common image is that of an eagle eating the head of a rabbit, representing the victory of virtue over vice. Another common theme, thought to represent harmony, depicts two flamingos with their necks intertwined, sometimes drinking or eating from the tree or fountain of life.<sup>3</sup>

*Patere* are products of Byzantine culture, a dynasty that produced many Venetian treasures. They are also the oldest type of Venetian public art. *Formelle*, a related type of public art, are also considered part of the *patere* collection, because they share many of the same graphical motifs. *Formelle* are larger than *patere*, and are characterized by a rectangular shape capped with a rounded arch, rather than being circular.



**Figure 7: Patere**

Collections of *patere* and *formelle* grace the facades of such Venetian structures as the *Ca' Donà de la Madoneta*, the *Ca' Cappello a Castelo*, and the *Ca' Vitturi* in the *Campo Santa Maria Formosa*, as well as the *campanile* of *San Aponal*, and a wall near the *Ponte de le Oche*. There are approximately 1,200 known *patere* in the entire world;<sup>4</sup> Venice is home to 471 of them. An additional 11 can be found on lagoon islands. Seven *patere* have disappeared from Venice.

### 3.1.2 Crosses

Venice, as it exists today, was little more than marshy swampland until after Christianity had become a well-established religion in Europe, and the crosses that appear



**Figure 8: Three types of crosses: Greek, Maltese and Roman**

throughout the city are almost exclusively symbols of that religion. Given the number of churches in Venice (142 currently, but closer to 1,000 in the sixteenth century), there are fewer crosses

decorating the city than one might expect. This is especially surprising when the number of

<sup>3</sup>Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 17.

<sup>4</sup> Elbag, Mark et al. *Preservation and Restoration of Venetian Public Art*. 2003. Pg 18.

crosses is compared to that of other pagan symbols like *patere*. However, as the expression so pointedly proclaims, "*Siamo Veneziani e poi Christiani*," ("We are Venetians first, then Christians"), it was more important to the largely insular Venetian community to declare political and mercantile allegiances than religious ones.

There are three popular styles of cross in Venice: Latin (*crux ordinaria*), Greek (*crux immissa quadrata*), and variants on the cross *pattée*. Latin crosses, the most familiar to practitioners of western Christianity, feature a longer vertical beam intersected near the top by a shorter crossbeam. Greek and *pattée* crosses have all arms of equal length; the Greek form uses uniformly-shaped beams, while Maltese and *pattée*-style crosses, some with origins in the Italian republic of Amalfi, have arms that narrow towards the center of the symbol.

As one might expect, crosses can often be found in the areas surrounding churches. Of the 74 crosses in the public art catalog in Venice, 28 are located in actual church *campi*, and 7 additional crosses are located on the streets surrounding churches. Lagoon islands account for an additional 6 crosses, a small but not entirely unexpected number, considering the relatively small number of churches on the islands outside of Venice proper. Two crosses are currently recorded as missing.

### 3.1.3 *Relievi* (Reliefs)

A relief is a piece of sculpture that protrudes from a wall. The subject matter for reliefs generally concerns religious scenes or significant events. Serving as a reminder of an important occurrence or event in Venice, reliefs help to remind Venetians of their history and of related mythology.

Reliefs also provide examples of the artistic styles popular in Venice hundreds of years ago, and demonstrate to historians the legends that certain neighborhoods held dear. Reliefs depicting Saint George slaying the dragon are particularly popular, with Rizzi's catalogue listing 16 throughout Venice. Reliefs are categorized by the percentage of the sculpture that protrudes from the wall. A low relief (*bas-relief* or *bassorilievi*) has less than half of its depth protruding from the wall; a high relief (*haut-relief* or *altorilievi*) has more than half.

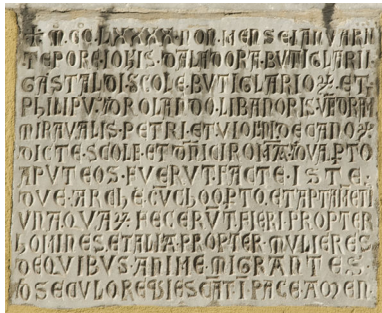


**Figure 9: Relief**

Venice is home to 386 reliefs.<sup>5</sup> Another 40 exist on the lagoon islands. Four reliefs have been noted as missing.

### 3.1.4 Inscriptions

Inscriptions are simply words that have been carved into stone and displayed in public locations. They usually display historical or religious messages, but can also serve as memorials. Typically written in old Venetian or pseudo-Latin, inscriptions were often



**Figure 10: Inscription**

produced to commemorate a prominent person or significant event. Their function is purely informational, but they now add to the artistic atmosphere of Venice, too.

The inscription in the Campo San Zaccaria is one of the best examples of this category, in part because it is in good shape, but also because of the information it contains.

A rough translation could be, " In this campo, near the cloisters behind these doors, the following are prohibited:

games and making a ruckus, loudly uttering bad words, being dishonest, leaving garbage, planting trees, nor any other such type of thing. Under grave penalty and by the decree of the most illustrious and most esteemed Lord Executioners Against Blasphemy. July 16 and August 8, 1620." While they are often low in artistic value, inscriptions do provide insight, sometimes even humorous, into the lives of ancient Venetians.

There are 28 inscriptions throughout the streets of Venice.<sup>6</sup> A further nine can be found on lagoon islands.<sup>7</sup> No inscriptions have been found missing, perhaps because they are of little value to treasure hunters.

### 3.1.5 Fragments

Fragments (*frammenti*), like their name suggests, are small broken pieces of other artwork. When larger carvings were destroyed, the remains were often discarded. However, on occasion, remaining fragments were spared and often



**Figure 11: Fragment**

<sup>5</sup> Insula Quaderno. November 2002. Page 14. Anno 4. Numero 13.

<sup>6</sup> Insula Quaderno. November 2002. Page 14. Anno 4. Numero 13.

<sup>7</sup> Rizzi, Alberto. Scultura Esterna a Venezia. 1987.



set into a wall. The fragment is not an intentional piece of artwork; no one makes fragments. Instead, they are the leftovers from grander objects that no longer exist. While they may have once been part of an important artistic sculpture, they are no longer of much significance.

There are 251 fragments in Venice, and 31 in the lagoon islands. Six fragments are recorded as missing.

### 3.1.6 Statues

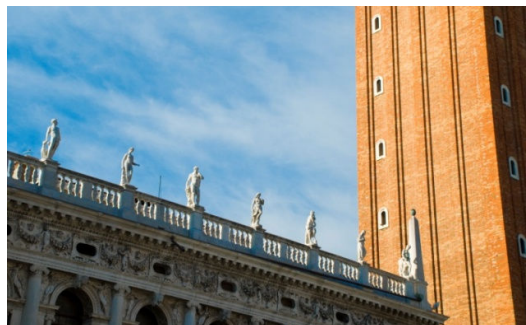
In Venice, statues are indicators of the importance and status of a building. A statue is a sculpture that is not embedded directly in a wall, but is structurally attached to a building in some way. Statues are often found accentuating the roofs of important buildings and churches and add figurative, often human, elements to the building's architecture, augmenting its



overall beauty and visual interest. In Venice, statues are almost always found on buildings of significance, most often churches. Venetian practices did not always permit ostentatious ornamentation, but statues could be used to symbolize the wealth, power, and distinction of certain groups of the population.

Longhena's iconic Baroque church, *Santa Maria della Salute* in *Dorsoduro*, is worth noting because of the statues adorning its exterior, including figures of angels and other biblical characters. It is one of the most spectacular examples of this category of external sculpture in Venice. The *Salute's*

**Figure 12: Statue** collection is representative of the general thematic content of most Venetian statues, which typically feature angels, the Virgin Mary, and other important Christian icons (e.g., the saint of the local parish). Just across the Grand Canal is the *Libreria Marciana*, the balustrade of which is decorated with many mythological figures that animate the roof of the building. There are 173 statues that are classified as "public art" in Venice, and an



**Figure 13: Statues on the Libreria Marciana**

additional 11 are found on islands in the Venetian lagoon. One statue, a Madonna with the infant Jesus, was found missing during cataloguing in 2000<sup>8</sup>.

### 3.1.7 Monuments

Unlike many cities with rich histories, Venice has surprisingly few monuments. This is a result of the unique statutes that governed the Venetian Republic for hundreds of years, which prohibited the elevation of one individual above others in the city, along with the city's unique pattern of development. Early Venetian citizens were concerned with their safety and survival on the barren and soggy islands of the Venetian lagoon. After the city had grown and began to take its present shape, a shortage of land became the more pressing issue. By the time Venice developed into a major European capital and citizens began erecting monuments, virtually all public land had been already spoken for, by churches, *campi* (public squares), and the like. Laws went further, preventing the construction of free-standing statues in an effort to reduce fighting between wealthy and powerful families who might perceive one individual being declared more important than any other.

As a result, the vast majority of monuments in Venice today postdate the fall of the Venetian republic in 1797. The densest area for monuments in the city is, by far, the *Giardini* of Castello, one of Napoleon's "improvements" to Venice.

Thirty seven – more than half – of the 67 monuments in Venice are located in these gardens, and the rest are scattered throughout the city. One statue of note is Andrea del Verrocchio's monument to Bartolomeo Colleonio. Colleonio, a Venetian mercenary, left his fortune to the city in the fifteenth century with the condition that a monument would be constructed in his honor "in front of San Marco." Because Venetians would be vehemently opposed to the construction of a monument in the *Piazza San Marco* where Colleonio had intended, the nonetheless impressive statue was instead placed in front of the *Scuola Grande di San Marco*, in the *Campo di SS. Giovanni e Paolo*.

Unlike most other public art in Venice, monuments are usually constructed from bronze or tenera stone. Their bases are typically made of Istrian marble.<sup>9</sup> While a number of



**Figure 14: Monument**

<sup>8</sup> Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 17.

monuments are fenced in, the majority are vulnerable to damage from people sitting on them, kicking soccer balls against them, and other detrimental human forces. Notable monuments include the above-mentioned one to Colleonio, the monument to Vittorio Emanuele II on the Riva degli Schiavoni, and the large collection in the *Giardini*.

### 3.1.8 *Stemmi* (Coats of Arms)

In Europe, coats of arms have long served as decorative and highly recognizable symbols of patrician families. They appear most frequently in Venice as stone carvings on the external walls of structures owned by wealthy and powerful Venetian nobles. Families like the Contarini, Barbarigo, Cappello, Foscari, Giustinian, Loredan, Marcello, Morosini, and



**Figure 15: Coats of Arms**

Pisani owned properties all over Venice (their names are still attached to many famous *palazzi* today), and at least one family crest would be required for each structure; hence, the significant amount of these types of public art objects.

Coats of arms, or *stemmi*, were not thought of as lasting artistic legacies, and details were often erased if a new family was to take ownership of a building. As such, a number of them are now blank, illegible, or missing entirely. Coats of arms in Venice span the Gothic, Renaissance and Baroque periods, and almost all use the shield as their basic design. Gothic *stemmi*

feature geometric elements like circles, rectangles, and simple shields. Renaissance *stemmi* became more elaborate, featuring leaf-like decorations, scrolls, and additional flourishes. In keeping with architectural styles, baroque *stemmi* were even more ornate and complex.<sup>10</sup>

One particular category of *stemmi* is special because of the way it communicates information about its owner: known as "talking" coats of arms, these *stemmi* use symbols with a pictorial or phonetic reference to the name of the family being represented. Some of the more obvious examples include the Dolfen family (a dolphin), the Da Ponte family (a bridge), and the Dalle Rose family (roses). The Barbarigo family used a beard on their *stemmi*, because "*barba*" is Italian for beard. Even more creatively, the Erizzo family used

<sup>9</sup> Insula Quaderno. November 2002. Pg 26. Anno 4. Numero 13.

<sup>10</sup> Ibid. Pg. 9

the letter “E” and a porcupine as their family symbol, as "*riccio*" is an Italian word for porcupine, or "*rizzo*" in the Venetian dialect.<sup>11</sup>

Venice contains 1064 *stemmi*, and the lagoon islands contain 99, together far outnumbering any other category of external sculpture in the Venetian lagoon. Sixteen *stemmi* have been reported missing in Venice since 2000.

### 3.1.9 Confraternity Symbols

Confraternity symbols are similar to coats of arms, but instead of patrician families, they indicate that the confraternities, or *scuole*, of Venice are the property owners. They are often placed prominently on buildings associated with each *scuola*, and also adorn houses and buildings owned by members. Venetian *scuole* were organizations brought together by a common craft or trade, also typically having a patron saint. To a degree, the *scuole* united the secular and sacred life of the city. Venice's confraternities were known for their charitable work, and they also acted as a support system for members in need.



**Figure 16: Confraternity Symbol**

There were six *scuole grande* in Venice: San Rocco, Santa Maria della Carita, San Giovanni Evangelista, Santa Maria in Valverde, Santa Maria del Carmelo, and San Marco. The six *scuole grande* were the largest and best-known of the greater collection of *scuole* in Venice. All *scuole* held meetings, ceremonies, and religious services within their walls; services were often held in the main halls, often ornately decorated and featuring notable works of art.

Venice has 196 confraternity symbols, with two others on lagoon islands.<sup>12</sup> The *scuole* only existed in Venice proper, so it would be rare for properties outside of the city to be associated with them strongly enough to warrant a symbol. Seven confraternity symbols have been reported missing.

### 3.1.10 Portali (Portals)

*Portali*, or portals, are entranceways to buildings or courtyards that serve both a structural and decorative purpose. *Portali* also include doorways with sculptures affixed to

<sup>11</sup> Bender, Michael et al. The Forgotten Art of Venice. 2000. Pg 118.

<sup>12</sup> Insula Quaderno. November 2002. Page 10. Anno 4. Numero 13.



their tops or with artwork that flows into the doorjambs. The main purpose of a *portale*, besides its obvious structural function, is to convey a sense of affluence and grandeur to those entering and passing by the building. On private homes, wealthy families would often incorporate their coat of arms into the *portali*. Besides these familial signs, a number of *portali* also contain reliefs, sculptures, planters, or inscriptions. In particular, *portali* on



**Figure 17: Portale**

churches frequently include reliefs of biblical scenes, or sometimes the image of the saint for which the church is named.

In Venice alone, there are 534 *portali*; while in the surrounding lagoon islands of Murano, Burano, Torcello, and Mazzorbo, there are an additional 18 *portali*. The *sestieri*, or districts, of San Marco and Castello contain the most *portali*, respectively 25 percent and 21 percent of the total number of *portali* in Venice. Historically, these neighborhoods were predominately residential, and therefore, money was spent on the appearance of the buildings to give an impression of family wealth and importance. Conversely, Cannaregio and San Polo

contain the fewest *portali*, at four percent each. These *sestieri* were traditionally commercial and less affluent areas, so less attention was paid to the buildings' ornamentation.

### 3.1.11 Lunette

*Lunette* are a particular subset of *portali*; these decorative arches span the tops of doorways and serve both a structural and aesthetic purpose. In Italian, *lunetta* essentially means "half-moon," describing the decoration's semicircular shape. *Lunette* typically surround artwork from a number of artistic mediums, styles, and themes. There are three prominent styles of *lunette* in Venice:

Byzantine, Gothic, and Renaissance. Byzantine *lunette* date back to the 12<sup>th</sup> century and are distinguished by their dome shape and religious themes. Gothic *lunette*, popular between the 12<sup>th</sup> and 15<sup>th</sup> centuries, are characterized by pointed arches, which are generally larger and contain more elaborate detail than other styles. During



**Figure 18: Lunetta**

the 15<sup>th</sup> and 16<sup>th</sup> centuries, Renaissance *lunette* appeared, with more elegant decorations and simpler subjects, such as the sole image of a saint or the Madonna.

Just as there are various styles of *lunette*, there are also a variety of materials and techniques used in their construction. Fifty-one percent of the *lunette* in Venice are made of Istrian stone, 24 percent are marble, 12 percent brick, seven percent tile, four percent paint, and two percent wood or metal. Istrian stone was a popular choice, because it is durable and relatively non-porous, allowing sculptures to endure in the damp Venetian climate. Besides the differences in materials, Venetian *lunette* also exhibit a variety of artistic techniques and media. The most popular is relief, accounting for 78 percent of all *lunette*, followed by 11 percent mosaic, seven percent sculpture, and four percent *fresco*.

There are 71 *lunette* in Venice; Cannaregio and Castello contain the greatest number, at 22 percent each. Most *lunette* are found on *palazzi* and churches because, in general, only wealthy families and institutions could afford them. Forty-five percent of all *lunette* can be found in residential areas and 23 percent on churches, monasteries, or convents. The remaining 23 percent of *lunette* are located in commercial areas.

### 3.1.12 Mascaroni

Decorative keystones, or *mascaroni*, play both an artistic and structural role in the buildings to which they are attached. They contribute to both the art and architecture of



**Figure 19: Mascarone**

keystones have artistic and historical value, too, but usually fail to attract attention from the public and historical conservation efforts.<sup>13</sup>

Keystones are commonly made from Istria stone, which is hard, waterproof, and easily workable. Its unique characteristics are the reason that much of Venice's public art remains in good condition (and in many cases still legible) today. Keystones are located on

<sup>13</sup> Ayetut. Computerized Catalog of Venetian Decorative Keystones. Pg 3.8–3.9, 6.1.

bridges, doors, and windows throughout all the *sestieri* of Venice. In 1995, WPI students documented and photographed 307 keystones in Venice. Forty-three percent of the total arches catalogued are doors, 29 percent are bridges, and 27 percent are windows. The remaining one percent consists of tunnels and one unusual piece – a decorative keystone head on an opening that once housed another piece of outdoor art.<sup>14</sup>

The distributions of the different kinds of arches in which keystones appear are quite even. Doors account for the largest portion of the total number. The number of decorative keystones on bridges is relatively small, however, accounting for only 88 keystones, on 78 out of over 400 bridges in Venice. It was determined that most of the bridges studied had only one decorative keystone.

*Stemmi* (coats of arms) are the most common decoration for keystones on Venetian bridges. Eighty-seven of the 88 bridges evaluated have *stemmi* as a keystone decoration. Only a few *stemmi* are found on doors and other arches. Only one bridge contains a head as a decorative keystone. The rest of the heads can be found on doors, windows, and other types of arches. Doors have the greatest number of heads as keystone decoration. Together, decorative keystones on the windows and doors were all heads with exceptions of four *stemmi* on doors. Doors and windows are often decorated with keystone heads, usually somewhat grotesque, to drive away evil spirits as well as potential human intruders.

Decorative keystones are also subject to damage. Of the total 307 pieces that were evaluated, the most common type of damage was a feature missing from a *stemma*. Forty-five *stemmi* pieces were found with at least some part of the shield missing. Some heads were also missing either the nose or the hair, and a few did not have any eyes.<sup>15</sup>

### 3.1.13 Flagstaff Pedestals

The winged lion is the principal symbol present in Venetian artwork; it is also a patriotic symbol of Venice and prominently featured on the Venetian flag. Besides that of the lion, there are many other flags that belong to Venetian culture, like those representing certain areas within the city, the city's *scuole*, families, or other organizations. These flags, along with their flagstaffs and pedestals, were typically located in *campi* near the group that they represented. Since far fewer flags are flown today in Venice, the flagstaff pedestal is often the only remaining indication of this tradition. The pedestals themselves contain

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<sup>14</sup> Avetut. Computerised Catalog of Venetian Decorative Keystones pp. 6.2-6.7.

<sup>15</sup> Ibid.

decorative designs, as well as historical or religious inscriptions and icons. The pedestal consists of two structural elements, the base and the body. The body holds the wood or metal flagstaff above the ground and contains the artistic elements, while the base is the platform on which the pedestal body rests.

There are 55 flagstaff pedestals in Venice and the lagoon islands, three of which have been enclosed in courtyards and are no longer public. Of the pedestals located in Venice, only 35 contain flagstaffs. The majority of the pedestals are located in or near *campi*, as churches and associated *scuole* are often the heart of each *campo*. Thirty-four of the pedestals are near waterfront, which can be attributed to the mercantile and military purposes of the flags they would have flown. In fact, two pedestals are located directly in the water within the *sestiere* of San Marco.



**Figure 20: Flagstaff Pedestal**

Flagstaff pedestals were created from a variety of materials and styles. Istrian stone is the most popular material used to make pedestal bodies, accounting for 76 percent of the pedestals in Venice. Some of the other materials used were bronze, Verona stone, and metal, respectively 11 percent, five percent, and four percent. Istrian stone was also commonly employed to construct the pedestal base, amounting to 75 percent of the total. Pedestals frequently contain artistic carvings; there are nine pedestals in Venice that display the winged lion of Saint Mark, most if not all postdating 1797. Other common themes are water, religious motifs, scuole, and familial coats of arms. Textual inscriptions are also often found on pedestals. Eleven percent of the pedestals in Venice have text concerning Italian Independence in 1866, and another 11 percent concern Venetian confraternities.

Currently, most flagstaffs in Venice are not and have not been used for many years. As a result, 17 percent are in poor condition and are unusable due to deterioration of the wood and pulley systems. Of the remaining 83 percent that are in good condition, only 20 percent are currently in use. In 1997, students at the Worcester Polytechnic Institute examined the pedestals to measure the severity of the damage that has been suffered. They found that the largest problem is cracking, affecting 26 percent of the pedestals. Grime affects 25 percent of pedestals; 15 percent are missing pieces. Other atrophic issues include rust, pitting, chalking, illegibility, and vandalism. The wooden flagstaffs, too, suffer from a



large amount of missing paint and cracking. Frequently, cracking appears where there is no paint and the flagstaff material is exposed to the humid Venetian climate.

### 3.1.14 Wellheads

Because Venice was cut off from reliable sources of fresh water for centuries, Venetians built underground basins to collect and filter rainwater. Their system of cisterns collected rainwater and retained it in a clay basin, which citizens could access. Wellheads



**Figure 21: Wellhead**

capped these cisterns. Often, wellheads were festooned with carvings of saints, family crests, inscriptions, or other images important to Venetians; carvings of saints usually faced the nearest church. The decorative characteristics of wellheads ranged through the Carolingian, Byzantine, Gothic, Renaissance, and Baroque eras.<sup>16</sup>

Wellheads exemplified the city's culture and its love for art, as well as functioning as a barrier between the important water reservoir

and sources of possible contamination. Wellheads functioned as protection for the water source by preventing animals from falling in and keeping floodwaters from contaminating the drinking water. It was also common to have a small hollowed-out bowl near the base of the wellhead, which was kept full for animals to drink.

As the city grew, so did the number of wellheads. They were typically located in the center of *campi*, and were always a place for socializing and interacting with neighbors. Photographs dating to as late as the nineteenth century show women washing clothes on the steps of wellheads, children playing nearby, and men hauling up the water. With the completion of an aqueduct from the mainland in the late 1800s, wells lost their function and were quickly abandoned.<sup>17</sup>

Istria stone is a type of limestone that has a gray-green or yellowish color. Lengthy exposure to the atmosphere causes the stone to obtain a whitish appearance through a process called "whitewashing." Unfortunately, this also makes Istria stone a prime candidate for exfoliation. Verona marble is a sedimentary rock composed of organic limestone and fossils.

<sup>16</sup> Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 20 – 24.

<sup>17</sup> Blackwell, Lewis et al. *Preserving Venetian Wellheads*. 2000. Pg 16 – 18.

It has either a reddish or whitish color depending on the carbon compounds it contains. All but two of the 217 public wellheads cataloged are composed exclusively of Istria stone, Red Verona marble, or White Verona marble. Istria is stone the most common material, accounting for 79 percent of the wellheads cataloged. Istria is followed by 14 percent Red Verona marble, and seven percent White Verona marble.<sup>18</sup>

Sixty public wellheads are located on the lagoon islands of Murano, Burano, Torcello, Lido, Malamocco, San Pietro in Volta, Portosecco, Pellestrina, and Chioggia. Rizzi originally cataloged 231 public wellheads in the *sestieri* of Venice (50 in Cannaregio, 58 in Castello, 20 in Santa Croce, 23 in San Polo, 48 in San Marco, 29 in Dorsoduro, and 3 in Giudecca).

### 3.1.15 Fountains

There are many types of fountains throughout Venice, some mass-produced and others unique and handcrafted. In 2004, a WPI project team gathered data about fountains and calculated that all the fountains in Venice collectively dispense about 135,867,600 liters (41,307,500 gallons) of clean, potable water every year. The team also calculated a condition rating for each fountain, which included a multitude of factors like rust, algae, graffiti, surface damage, grime, and missing pieces. The team formulated an algorithm based on the condition rankings, subsequently determining the overall damage ranking of each object.<sup>19</sup>



**Figure 22: Fountain**

In Venice, fountain ownership is marked by the lack or presence of a service panel. Fountains that have a panel are owned by the city; the panels are installed by VESTA, a public works contractor, to keep track of the amount of water used for billing purposes. VESTA owns outright the fountains without a panel. The city owns 60 percent of the fountains, and VESTA owns the remainder. However, 70 percent of VESTA's fountains are functional, while only 60 percent of those owned by the city are. The question of ownership is important to those wishing to pursue restoration, or wanting to report a broken or unserviceable fountain.

<sup>18</sup> Ibid, Pg 26 – 27.

<sup>19</sup> Kelley, Aaron et al. Public Art Preservation in Venice: Non-public Wellheads and Fountains. 2004. Pg 21.

### 3.2 Types of Restoration

Current preservation techniques include treatments to stone, the material that makes up most of the pieces of public art in Venice. The ultimate goal of stone preservation is to protect it from moisture by sealing the pores on the surface of the object. If an object is not fixed in place, one way to achieve this is to detach it from a wall and immerse it in a solvent. However, it is often the case that a piece will be permanently attached to the side of a building, and in these cases removing it does more harm than good. In such a situation, the restorer is limited to a paint or spray application. This only applies to the exposed portions of the piece; there will be one or more faces that will not be accessible, and many times this is how the most damage is done. Moisture that seeps in through the inaccessible faces is not able to escape because the front of the object is sealed. The damage happens during freeze/thaw cycles that occur naturally with the changing of the seasons, when the moisture contained within the object changes state and causes the piece to crack or separate from the object it is mounted on. Being that all public art in Venice is exposed to nature in some way, the only useful techniques for preservation are a good cleaning and to protect them from the elements as much as possible.

There are other preservation techniques used for more seriously damaged pieces (e.g. a break in the stone). When the broken piece is small and relatively lightweight, adhesive is applied and the piece is fixed back in place. If the fragment is large and heavy, a metal dowel must be used to support the weight in combination with an adhesive. In this case, a noncorrodible metal must be selected, or else corrosion will split open the piece. A copper alloy, called Delta metal, is commonly used in these cases. In both situations, the repaired face is patched with plaster of Paris.

## 4. Methodology

The first objective for our project was to improve and streamline the catalogues that exist of Venetian public art. A number of different databases have been created in the past nineteen years of Venice IQPs, and by their very nature have differing formats, organizational structures, and ranges of data. These variances and the age (and resultant obsolescence) of the databases have resulted in holes in the data. To help solve this problem, we cataloged the *portali*, wellheads, flagstaff pedestals, and *mascaroni* on several of the lagoon islands.<sup>20</sup>

### 4.1 Update and expand catalogues

We first determined the gaps in the existing catalogs by reviewing past IQP reports and identifying the categories they had not catalogued. We also created a list of the public art that *had* been reviewed by these teams, and we examined it with certain criteria in mind. For instance, the island and the art must be public. If, for example, a wellhead is located in the courtyard of a church, we chose not to catalog it because the church is privately owned, can lock its gates, and thus the wellhead is not necessarily always accessible to the public. We also decided that if an island is technically public but not easily accessible nor well-inhabited, we wouldn't catalog it. Islands matching this description tend to contain much less art and would be too time consuming to justify the limited outcome.

Using these criteria, we determined that the more populated lagoon islands of Murano, Burano, Mazzorbo, and Torcello had the most amount of missing data and would be best worth our time. In particular, wellheads, *mascaroni*, *portali*, and flagstaff pedestals had not been documented on these islands. However, in the early 1990s, EarthWatch had conducted a widespread survey of Venetian public art and covered some public art on a few of the islands. We examined the EarthWatch files and field forms, determining that they had only catalogued wellheads on Burano and Torcello and *mascaroni* on Murano. Therefore, we cataloged *portali* on Torcello, Mazzorbo, Murano, and Burano; *mascaroni* on Torcello, Burano, and Mazzorbo; flagstaff pedestals on Torcello, Burano, and Murano; and wellheads on Murano, Torcello, and Mazzorbo.

For what we consider the current state of the public art catalog, see Appendix G.

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<sup>20</sup> Murano, Burano, Mazzorbo, and Torcello



## 4.2 Data collection

Since we were completing existing catalogs, we used the field forms from the relevant past IQPs. This includes forms from the 2002 "*Portali e Lunette: A Multimedia Catalog for the Preservation of Venice's Artistic Entrances*," the 2000 "Preserving Venetian Wellheads," the 1997 "A Computerized Catalog of Flagstaff Pedestals in Venice, Italy," and the 1995 "Computerized Catalog of Venetian Decorative Keystones projects."

We collected data during weekdays in the morning and afternoon, when the light was the best. The first island that we cataloged was Mazzorbo because, as a smaller island, it could serve as a dry run and allow us to coordinate our cataloging methods. It was important that our ratings and measurements were consistent between each person in the group, as well as with past IQPs. Any discrepancies in the rating system would mean that the restoration estimates would be inaccurate.

We located the public art by searching the islands street by street, using MapInfo maps (with building layers turned on) to keep track of the streets we completed and to mark down the exact location of the items we found. The maps proved especially useful because, on many of these islands, the address numbering systems are not intuitive and street signs are often difficult to find (or completely nonexistent). When larger islands were made up of smaller islets separated by canals, we completed one islet at a time. In the case of Murano, we split the island in half and did three islets in one day and the remainder the next. The data we collected varied by the type of art we were examining; wellheads and pedestals involved more intensive cataloging because each side was examined as a separate entity. Overall, we recorded all standard information as was done by past IQP groups, including the item's location, description, and condition. This information is essential to estimating restoration cost and priority.

## 4.3 Nonprofit organization

The Venice Project Center has amassed a great deal of information about Venice over the past 19 years. Information specifically relating to public art spans geographical information system maps, condition-assessment forms, and a comprehensive database for each type of art. In addition to this collection of information, we contributed a priority-ranking system this year that can be used to determine which pieces are in the greatest need of restoration (see the discussion later in this report). Unfortunately, all of these resources sit unused in boxes in an office until students doing the next group of projects need them; they have an enormous untapped potential. One way to use these resources is to create a nonprofit organization that



**Figure 23: PreserVenice poster**

could, all year long, manage the collection of public art in Venice. We examined procedures for founding a nonprofit organization – called PreserVenice – for the purpose of conserving and restoring Venetian public art. We also wrote the bylaws for PreserVenice to submit to the Italian government, allowing it to become an officially-recognized nonprofit organization (see Appendix C). In addition, we wrote a job advertisement for PreserVenice's first employee (see Appendix A). Eventually, a full-time, multi-person staff will be necessary, but in the early days a single employee would suffice. We also created several promotional items for use by PreserVenice, including a poster, postcards and bookmarks (see Appendix B).



**Figure 24: PreserVenice logo**

#### 4.4 Priority analysis

An area rarely and inadequately studied by previous IQPs in Venice is that of prioritizing objects for restoration. This is a multi-faceted and complicated area, because not all pieces of public art are created equal. Some are small, some are immense, some have direct significance to the history of the city, and others are purely decorative. Our goal was to produce a system that rendered these differences unimportant and allowed large monuments to be compared to the smallest patere in terms of which to restore first.

Fortunately for us, some of the work had been done already. In his 1993 paper, "A Computerized Catalog of Outdoor Art in Venice with Automatic Estimation of Restoration Costs," published in the proceedings of that year's International RILEM/UNESCO Congress, Professor Fabio Carrera lays out his thoughts on the subject, having done much of the

preliminary research. The fact that his work applies directly to Venice is also a bonus for those of us following in his footsteps, because his understanding of the subject, even in the "early days," was necessarily better than ours is after seven weeks. He also published a second paper on the subject in 1997, entitled "What cultural heritage do we preserve and why?" Coming several years later, this paper addresses the topic in more detail and with more research and experimentation. Together, these two papers serve as the backbone of our system.

In addition to Prof. Carrera's work, past IQP groups have tried different ways to record the conservation status<sup>21</sup> of objects they catalogue. These have met with varying degrees of success – some are excessively complicated, requiring the recording of dozens of ratings for each *side* of objects like well-heads (which can have as many as eight sides in some cases). These methods are, while extremely detailed and thorough, the antithesis of Prof. Carrera's system, which aims for simplicity and widespread applicability. Granted, they do pursue slightly different aims; the IQPs strived to record all pertinent information about an object, while Prof. Carrera's system uses selected bits of that information to go a step further and prioritize objects. There are still some useful ideas that have originated in past IQPs, however, and we have incorporated them into our system, along with Prof. Carrera's methods.

In short, we feel that we have a prioritization system that can be applied to all public art objects in Venice, large and small, "important" and not. It is a great equalizer; while our work this term has only used existing information about objects in our catalog, we see the potential for a great streamlining of in-the-field data collection as well. When cataloguing with the current method, one records over a hundred numbers for a wellhead and fewer than five for a portale.<sup>22</sup> If the ultimate goal of recording these numbers is, in fact, to determine whether an object is in need of restoration (and how badly so), our prioritization system allows each object to receive the same treatment and time from a rater in the future. In addition, our system does away with confusing and cryptic category definitions such as "Accretions2" and "SurfaceCracks," instead replacing them with an easy-to-understand system that is easy for anybody to use, whether or not they are familiar with past work, are

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<sup>21</sup> Conservation status is not the same as restoration priority; the former indicates what condition an object is in, while the latter looks at a variety of factors (including conservation status, to a degree) to determine whether an object is worth restoring.

<sup>22</sup> This is a function of the amount of field work required for each category. There are relatively few wellheads in Venice, so past IQP groups could devote an hour or more to each. Portale are more numerous, hence the simplified form.

well-versed in architectural terminology, and so on.<sup>23</sup> The entire system is based on a five-level scale with ratings from zero to four, where zero is always the case requiring the least intervention and four the most. This provides intervals of 25%, probably approaching the limit of accuracy provided by "eyeballing" something, and allowing quick ratings to be made in the field. Furthermore, given the roughness of existing data and generously allowing for inconsistencies, the zero-to-four system acts to smooth out the information.

Our system, based largely on that of Prof. Carrera, has several large categories ("meta-attributes"), encompassing the main areas of interest in prioritizing an object for restoration. The meta-attributes are the object's state of conservation, its vulnerability, its social and historical importance, its artistic value and uniqueness, and an important category that decides whether immediate action will be required: emergency criteria. An explanation of the categories follows. Ratings marked with an asterisk (\*) do not use the entire scale, omitting either one extreme value or intermediate values for reasons explained in the accompanying paragraph.

#### **4.4.1 State of Conservation**

This category is an objective judgment of the "shape" a piece is in, completely disregarding artistic value and other factors. The sub-categories, or "attributes," are:

- Surface condition, or "corrosion, deposits and discoloration." 4 is severe and threatening; 3 is problems that would be threatening if they worsened; 2 is minor; 1 is some evidence; and 0 is no evidence.
- Damage coverage, or "percentage of object covered by damage." 4 is 100%; 3 is 75%; 2 is 50%; 1 is 25%; and 0 is 0%. Raters should round up; an object with 20% surface damage would be given a rating of a 1. Thus, very few objects, only those in perfect condition, would receive a rating of 0 in this sub-rating.
- Structural integrity, or "missing pieces." 4 is severe and pronounced; 3 is potentially severe if the condition worsens; 2 is moderate; 1 is minor; and 0 is no evidence of any pieces missing.
- Readability, or "legibility of the design and/or text." 4 is entirely illegible; 3 is 75% illegible; 2 is 50% illegible; 1 is 25% illegible; and 0 is entirely legible. Raters should round up, as with "damage coverage." A stemma makes a good example; can the family to which it belongs be determined?

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<sup>23</sup> The one exception to this is the historical context, which requires some knowledge about the history of the place where objects are being rated.

- Cracking. 4 is structural cracks; 3 is deep surface cracks that could become structural cracks; 2 is average surface cracks; 1 is minor surface cracks or scratches; and 0 is no cracking.

#### **4.4.2 Vulnerability**

This category addresses an object's vulnerability to potential threats, usually damage caused by environmental and human factors and activity. Attributes are:

- Risk of theft. 4 is small, easily detached, close to the ground or a window, and hidden behind scaffolding; 3 is any three of those criteria; 2 is any two; 1 is any one; and 0 is reserved for large, heavy and immovable objects that would be immediately noticeable if stolen.
- Exposure to vandalism and accessibility. 4 is at ground level, in a public area, with some "prestige" associated with vandalizing the object; 3 is any two of those criteria; 2 is any one; 1 is low risk of vandalism, and 0 is completely inaccessible.
- Exposure to the elements. 4 is exposure to strong wind, direct sun, rain or drainage, and ocean spray; 3 is any three of those elements; 2 is any two; 1 is any one; and 0 is no exposure to the elements.
- Material used in construction. 4 is wood and metal; 3 is terracotta and stucco; 2 is non-Greek marbles and non-Istrian stone; 1 is Greek marble; and 0 is Istrian stone. This rating is determined by whether the material exists on the object, no matter in what quantity. A small amount of wood or metal automatically qualifies a piece for a rating of 4, as would metal support hooks.

#### **4.4.3 Social and Historical Importance**

This category places the object in context, in the community and in history. Ratings require at least some specific knowledge, but depending on the objects being rated, the information needed can probably be condensed to a single paragraph. The more background reading is done, however, the better able the rater will be to assign proper ratings. It is worth noting that sometimes an object of social importance is in *less* need of intervention than one that is not, simply because the important one probably has caretakers and interested parties looking after it already. Attributes are:

- Popularity/folklore, or "use and recognizability by a local population, whether past or present." 4 is very; 3 is above-average; 2 is somewhat; 1 is rare; and 0 is never.
- Visibility or location, or "visibility to passers-by and volume of pedestrian and vehicular traffic." 4 is high, 3 is above-average, 2 is moderate, 1 is low, and 0 is any object that is almost never seen by traffic.

- Historical association, or "importance to local (Venetian) history." 4 is high; 3 is above-average; 2 is somewhat; 1 is slight; and 0 is not at all significant to the story of the place where the object can be found.
- Informational content, or "amount of biographical information, text, or examples of styles and techniques important to the history of art and architecture contained in the object." 4 is full of such information; 3 has an above-average amount; 2 has some; 1 has little; and 0 has no information contained in it.

#### **4.4.4 Artistic Value and Uniqueness**

This category assesses an object's importance as a piece of art in an urban landscape. Attributes are:

- Artistic importance\*, or "famousness of the sculptor or artist." 4 is a famous artist; 2 is an artist who can be identified; and 0 is an unidentified artist. There are not enough categories to use the entire zero-to-four scale.
- Monumentality, or "sheer size and influence on the surrounding urban landscape." 4 is very significant; 3 is above-average; 2 is somewhat; 1 is minor; and 0 is none.
- Crowdedness, or "percentage coverage of carved figures, human or otherwise." 4 has 100% figure coverage; 3 has 75%; 2 has 50%; 1 is 25% covered; and 0 has no figures (text or geometric decorations only).
- Figurativeness, or "type of figures depicted." 4 is human features that are elaborate and life-like; 3 is animal features; 2 is plant figures; 1 is geometric features; and 0 is text only.

#### **4.4.5 Emergency Criteria**

This category indicates, more than any other, whether an object is in urgent need of intervention to prevent damage or loss. Damage comes from a number of sources – the elements, chemical interactions with the environment, human contact, and so on. Pieces being dissolved by acid rain or bacterial secretions are in greater need of saving than those that have had a finger snapped off, a one-time occurrence unlikely to happen again and unfixable (by Italian law) in any case. Attributes are:

- Risk to public safety. 4 poses an extreme and immediate risk to public safety; 3 is heightened risk; 2 a moderate risk; 1 is a low risk; and 0 is no risk.
- Danger of loss of the object, excluding theft. 4 is in extreme danger of being lost; 3 is in significant danger; 2 is in moderate danger; 1 is in little danger; and 0 is in no danger of being lost. Loss can happen when an object finds itself at the middle of a construction

project, when it is hammered repeatedly by unsecured window shutters, and so on. Theft is addressed above under "vulnerability," while this category encompasses all the other paths to ultimate loss and destruction.

These categories require the recording of 20 numbers for each object, a welcome improvement on past IQP rating systems that required recording up to 320 numbers for a single object, and in the true spirit of simplicity found in Prof. Carrera's work. It allows objects to be rated quickly, intuitively, and efficiently. The 25% accuracy of the zero-to-four system may be subject to criticism that it is not precise enough to detect minor deterioration, but if the system is used to compare an object now with the same object ten years later (and ten-year updates are indeed optimistic), any change in status worth noting will manifest itself in a change of at least one point in at least one of the categories.

At this point, a flexible and adaptable framework has been established. Even given the general and broad categories, not every object may fit into the system perfectly. More likely, though, is the case where all the data for each attribute is not available. While we suggest that future pieces be catalogued with this system in mind, previous efforts used their own forms and recorded information they determined to be important to an object's condition. In all likelihood, the old data can be adapted (and much of it thrown away) to make it work with the prioritization algorithm, too. For an example of a prioritization case-study conducted with this system (and with imperfect data), see the case study later in this report.

In any case, the raw attributes based on the data are not adequate. Certain components of the priority scheme are more important than others. Prof. Carrera conducted experiments to determine which, and of course this is where subjectivity begins to creep into the picture. Interviewing three important figures in the Venetian art community (an art historian, a restorer, and an architect), he determined the weightings that each gave to the meta-attributes listed above. Some agreed on some meta-attributes, but in a few instances there was a large spread. The architect's ratings were usually incongruous with the others', and Prof. Carrera instructed us to regard those weightings with caution.

We kept in mind our main project objective (to preserve and conserve public art in Venice) and the reason choosing it (to help save Venice's cultural and artistic heritage) when producing our own ratings. While social and historical importance were given negative weights by most of the experts, we have opted to align our weightings with our project goals somewhat. Our final weightings came out as follows:

**Table 1: Final ratings**

	<b>Historian</b>	<b>Restorer</b>	<b>Architect</b>	<b>Us</b>
<b>State of Conservation</b>	1.14	-1.54	28.81	3
<b>Vulnerability</b>	1.77	0.95	13.53	6
<b>Historical Importance</b>	-3.49	-11.10	5.77	6
<b>Social Importance</b>	-2.55	-4.22	-2.14	-3
<b>Artistic Value</b>	14.45	12.89	9.35	13
<b>Uniqueness</b>	8.83	14.61	7.59	8
<b>Emergency</b>	8.46	4.62	-5.28	4

Our weightings represent a balance between the need to preserve objects that are important and significant, and the desire to give other objects a fair chance at restoration. The point of this prioritization system is not to preserve only the largest, most visible objects in Venice, but to look at the entire collection and ascertain which objects truly have the greatest need for intervention. The weightings aren't final – we invite future students to tweak them and see how the results change.

Nor are these the only weightings involved in our algorithm. Within each meta-attribute are the attributes explained on previous pages, each of which may or may not be more important than the others in its category. We argue, for instance, that corrosion and abrasion constitute a greater risk to an object than a part that has been broken off; the former represent an ongoing process that can slowly ruin an object on a daily basis, while the latter is a one-time occurrence that probably will not happen again. Of course, these are sweeping generalizations, but when dealing with collections of 4,500 pieces or so, one must make them at some point.

In short, our system works. Preliminary tests with very rough weightings still produced, based only a dozen objective pieces of information about an object, a top-ten list featuring large, human-shaped and attractive objects and a bottom-ten list of primarily fragments and chimney stones. For refinements and further information, see the case study in the Results section.



## 5. Results and Discussion

Our cataloging located one *mascarone* on Mazzorbo; one flagstaff pedestal on Torcello; one pedestal, 12 *portali*, and two *mascaroni* on Burano; and 12 *portali*, three wellheads, and one pedestal on Murano. Each have been entered into the appropriate Microsoft Access databases and included with our project's CD.

For the results of our work with the non-profit organization, reference the by-laws found in Appendix C.

### 5.1 Priority Case Study

In an effort to test our new priority system against a diverse collection, we applied our system to a comprehensive catalogue of external sculpture in Venice – Alberto Rizzi's catalogue of 2930 objects, to be precise. Our aim was to demonstrate that the system provides a good spread in ratings, that it can work for any type of public art object, and that it is a useful method of prioritizing objects for restoration.

Unfortunately, Rizzi's catalog does not include all the information that is necessary to satisfy our meta-attributes. Fortunately, some IQP projects augmented his work with their own condition assessments. Together, the two databases provide twelve useful fields, not quite the twenty we recommend, but still, as it turns out, perfectly adequate:

**Table 2: Useful prioritizing fields**

Social	Physical	Artistic	Historical	Vulnerability	Uniqueness
1. Family	3. Condition	6. Known artist	8. Age	10. Material	12. Type
2. Visibility	4. Dimensions	7. Figurativeness	9. Inscription	11. Metal present	
	5. Surface area				

An explanation of each field and its break-down for scoring can be found in Appendix E. A few fields were binary (e.g., either a family association existed or not, either an inscription existed or not), while others use the zero-to-four system (e.g., different types of materials). Following the assignment of a "score" for each of the twelve categories, weightings were applied and values for the meta-attributes computed. Finally, meta-attribute weightings were factored in and the final weighted sum of the meta-attributes produced a value, typically between -0.2 and 3.0, that could be normalized to a scale from 0 to 100. Rounding to two decimal places yielded unique values for most of the 2390 objects.

The system was produced in Microsoft Excel, allowing for a limited degree of automation. More sophisticated programming environments would permit even more

automatic functions. As it is, the database needed some modification to allow compatibility with our algorithm. For instance, in Rizzi's "note" field, he describes in natural language the object's condition, using terms like "corrosion" or "broken" or "cracked" in the context of larger sentences. For our spreadsheet to assign a value to these terms, however, Rizzi's note had to be replaced by a one-word substitute. We used the "worst" term for any given note, choosing "corrosion" over "illegible," for example, if both were present in the same note. An ideal system would recognize both (in the context of Rizzi's original note) and rank that piece higher than a piece with just one problem.

The system allows for adjustments to weightings. The first spreadsheet contains the database and "score" calculations. The second contains an adjustable weightings system, and the third calculates the results. Weights can be typed in relative to one another, and the spreadsheet automatically computes them as percentages of a total. We used the following weights for our general evaluation of the entire catalog, where the larger words are meta-attributes (for comparison to the art historian, restorer and architect) and the smaller ones are weights for each of the "scores" detailed in Appendix E. There is no "restorability" meta-attribute below because we found no field in the databases that could be adapted to this particular category.

**Table 3: Adjustable weighting system**

<b>SOCIAL:</b>	-3	<b>HISTORICAL:</b>	6
<b>Family</b>	1	<b>Age</b>	7
<b>Visibility</b>	3	<b>Inscription</b>	5
<b>PHYSICAL:</b>	3	<b>VULNERABILITY:</b>	6
<b>Condition</b>	8	<b>Material</b>	6
<b>Dimensions</b>	6	<b>Metal</b>	10
<b>Surface Area</b>	6	<b>Other risks</b>	4
<b>ARTISTIC:</b>	13	<b>UNIQUENESS:</b>	8
<b>Artist known</b>	4	<b>(N/A)</b>	
<b>Figurativeness</b>	3		

These weightings produce an interesting top-ten list: SM010, CN177D, CS166, CN281A, CN177A, CS018, DD232, CS286, CS388, and SC046, from 1 to 10. The top-prioritized piece for restoration, SM010, is a statue of the Madonna on a busy street near the Piazza San Marco. CN177D, piece number two, is one of four large, well-known statues in Cannaregio that adorn the ground floor of a house (piece number five is another, and the rest show up within the top 100). Interestingly, too, these statues do not depict religious figures, but instead merchants, of particular value to Venetians and the city's history. The list goes on:

CS166 is a large statue of the Madonna, CS018 is an elaborate lunetta, DD232 is another statue, CS286 is a bust of a Roman emperor (one of two), CS388 is a Pietà on the Ospedaletto near SS. Giovanni e Paolo, and SC046 is a damaged statue of an angel at the ground floor of a building in a busy tourist and commercial area.

It is remarkable – but not entirely unexpected – that the system, without any information other than the simple textual and numerical fields explained in Appendix E, picks pieces that are parts of larger collections, have strong human elements, and that are in busy and ground-floor locations, all important factors in choosing which to restore. Readjusting weightings to suit one's individual taste will produce interesting different top rankings. For example, if one uses the weightings calculated by Prof. Carrera for each of the experts consulted in his experiment, one finds the following top-three lists:

**Table 4: Example of weighted attributes**

<b>Historian</b>	1. CS133	2. SM279B	3. SP160A
<b>Restorer</b>	1. CS133	2. SM279B	3. SC186
<b>Architect</b>	1. DD072B	2. CN456	3. CN185A

The historian and restorer, with similar weightings, actually produce the same results for the top two objects. The architect's list is completely different, as one would expect given the weightings he chose. If one adjusts the weightings to strongly favor other categories, the following pieces show up in the number-one position:

**Table 5: Public Art Attributes**

<b>Social</b>	SM345
<b>Physical</b>	CS018
<b>Artistic</b>	SM010
<b>Historical</b>	SP232
<b>Vulnerability</b>	CS245
<b>Uniqueness</b>	SC046

Several of those pieces also show up in our top-ten list, indicating that our weightings, while fair, also select the pieces that are of the greatest artistic value.

A few final exercises can be conducted with the data. We recommend that future groups look for noticeable, natural breaks in the rankings scores, suggesting where pieces can be grouped into different general priority levels (as a professor might assign grades).

One could also plot pieces on a map and use the prioritizations to create restoration packages. For instance, a map of the top-ranked 100 pieces indicates certain clumps:



**Figure 25: Map of the top 100 prioritized objects in Venice**

The map also shows that top-ranked pieces are distributed evenly in every part of Venice. No area is favored, and some of the top pieces are in areas where tourists rarely tread – those are the pieces that are at the greatest risk of not being maintained, because they may be in areas where there is less money available to do so, or because there is no need to "keep up appearances" to entice moneyed visitors into one's shop. Most of the pieces do, however, fall on major pedestrian thoroughfares.

The system does work, and surprisingly well, given the limited information to which we had access. With better information and some refinement, the results could be even better.

## **6. Conclusions and Recommendations**

The overall goal of this project is to promote awareness and appreciation of Venetian public art. To accomplish this, we further improved and streamlined the catalogues that exist of Venetian public art, wrote a detailed and informative book chapter, and furthered the efforts to found a non-profit organization.

### **6.1 Cataloguing**

After we finished cataloging Murano, Burano, Mazzorbo and Torcello, the Venice public art database was closer than ever to being complete. The catalog needs to be constantly updated, however, and there are still some types of public art that are not fully catalogued. We combed Venice with a list of suspected missing pieces to confirm which are truly missing and which were simply previously overlooked. The results of that search can be found in Appendix D.

### **6.2 Book Chapter**

The book chapter we wrote includes sections about all of the different types of public art along with sidebars on the Venetian lion and on church floors. It has been heavily edited and images have been selected to accompany the document. The next logical step would be to have this chapter published. The actual document can be found in Appendix H.

### **6.3 Non-Profit Organization**

Actually founding a nonprofit organization responsible for the conservation and preservation of Venetian public art is the next step. We have a unique database of information that is not currently being utilized to its fullest potential. This organization, PreserVenice, could first be run by a university student or recent graduate, and eventually a full time staff would take over to make the most of the databases. Priority restoration lists and cost estimates can also be formed into restoration packages by PreserVenice, which would then contact restorers and oversee actual restoration efforts. All of this would serve the end of preservation and conservation of public art in Venice. We wrote a full set of bylaws for this organization, available in Appendix C. We also produced promotional materials for PreserVenice, in Appendix B. Booklets, posters, postcards and a website will all help to spread the word about PreserVenice. An officially-recognized organization can

strengthen the legitimacy of future public art projects in Venice, whereby those hoping to restore an object can partner with PreserVenice, use the name to legitimize their project, and then cooperate with other organizations.

We encourage future public art IQPs to pursue and complete the foundation of the organization. After completing an IQP in public art, one comes to the realization that it is not feasible for students to undertake the restoration of even a single piece of public art. They are able to select pieces, and perhaps even take steps towards the process, but seven weeks are simply not enough time to see the process through to completion. As such, we have concluded that a non-profit organization is the best way to save Venetian public art. We have had some time to think about how such an organization would work. Meetings with prominent members of private committees (e.g., the Marcellos) have shown us that, if our organization stays true to its goal of preserving public art<sup>24</sup>, other organizations will be more than willing to collaborate with us. We recommend going further, however, examining possibilities for collaboration within the greater Venetian and even global communities. Travel agencies, cruise ship companies, church congregations, even a Dunkin Donuts "Venetian Cappuccino" – these are all ideas that have been suggested at one point or another this term.

The website, HTML/CSS written by hand and hosted at the time of writing at [www.preservenice.org](http://www.preservenice.org) (on the Venice Project Center server), is currently a simple site with basic information. Future work could add a functional donation interface, as well as a Web-GIS system that would enable users to turn on and off layers of Venetian public art as they saw fit. Enabling a user to find public art objects of interest to them could result in a greater willingness to donate to our cause. Another useful application for such a GIS interface would be the assignment of credit for restoration. A piece of public art, unlike a painting in a church, cannot have a plaque installed beside it to indicate who sponsored a restoration. So, having such a function prominently featured in the online system would again encourage potential donors. One need only look at the websites of other private committees for further ideas: a "wish list" for restoration, adopt-a-monument programs, fundraising collaborations, and so on.

We also recommend that future groups examine the possibility of finding grants to fund restoration work, an employee's salary, or any other aspect of public art restoration.

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<sup>24</sup> I.e., does not tread on the toes of other committees

Money is, as always, the answer to any problems that may arise, but there needs to be money in the first place for anything to happen.

## **6.4 Conclusion**

The 2007 Art Group had the time of our lives in Venice. Between meeting the fascinating individuals who helped us with our project, visiting parts of Venice that tourists never ordinarily see, and learning more about public art and the city of Venice than we ever imagined was possible when we began our degrees at WPI, we will not soon forget this term and our altogether too brief time in Venice. We wish future public art groups the same degree of success and happiness that we were fortunate to enjoy in Venice.



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## **Appendices**

### **Appendix A: Internship job description**

#### **Job opportunity: Intern for a non-profit organization**

In a position dedicated to the preservation of Venetian public art, PreserVenice offers you the opportunity to learn about the extensive collection of outdoor sculpture in Venice and to become acquainted with prominent Venetian restorers, historians and others. A total of 4,400 pieces have been catalogued throughout Venice and the lagoon islands, and you would have access to information about all of the objects through a digital database that includes locations, conditions, and photographs. With this catalogue, restoration priority for the objects has already been determined, and your responsibilities would include overseeing the actual restoration process, as well as conducting fundraising and promotional work for PreserVenice. Furthermore, you will act as the organization's webmaster and as a contact person for anybody requiring further information about our activities. The ideal candidate would have a degree in art, architecture and/or conservation, although one is not required. We do require, however, a creative flair and an energetic personality. You should also be familiar with MapInfo, Microsoft Office, HTML, CSS, Adobe Photoshop, and other similar programs.

For more information, contact Fabio Carrera at [carrera@wpi.edu](mailto:carrera@wpi.edu), visit [www.preservenicenice.org](http://www.preservenicenice.org), or call (041) 523-3209.

## Appendix B: Promotional Materials

"Doors of Venice" poster:





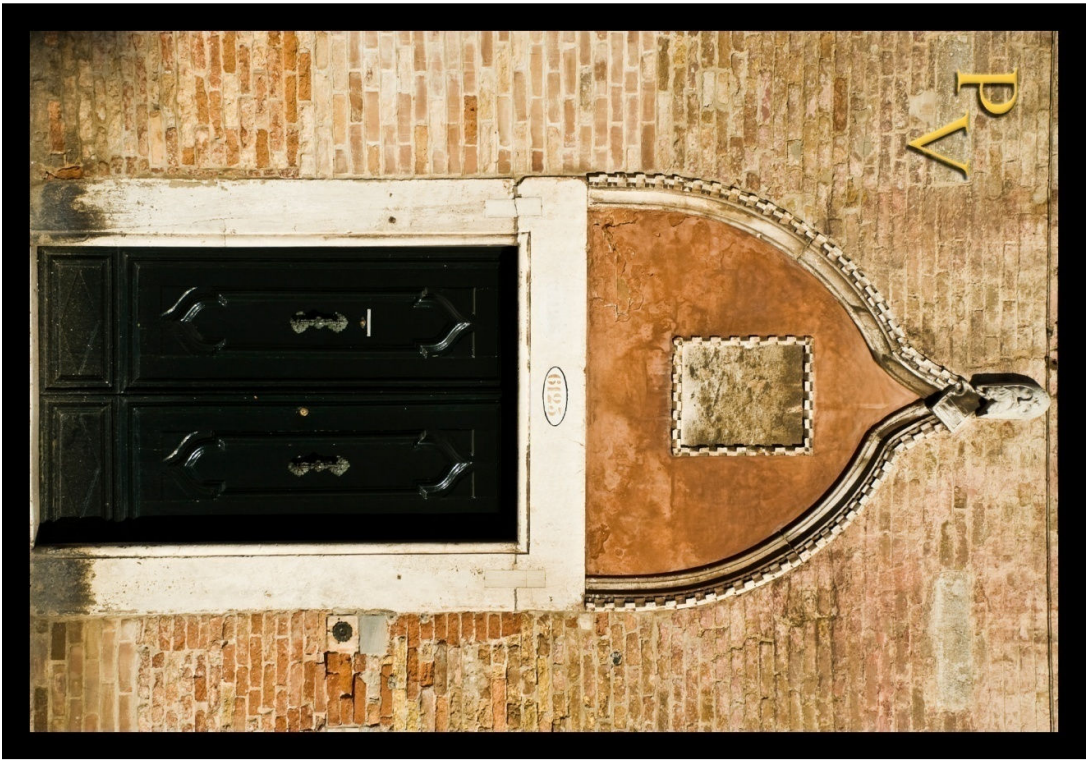
PreserVenice postcards:











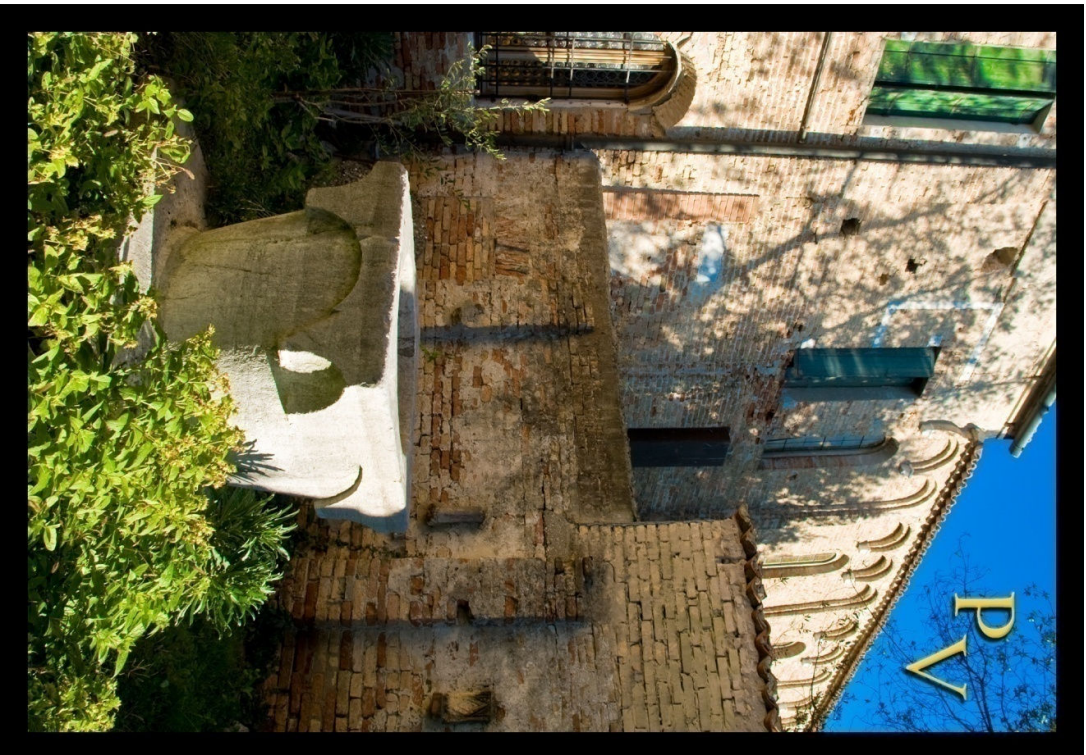
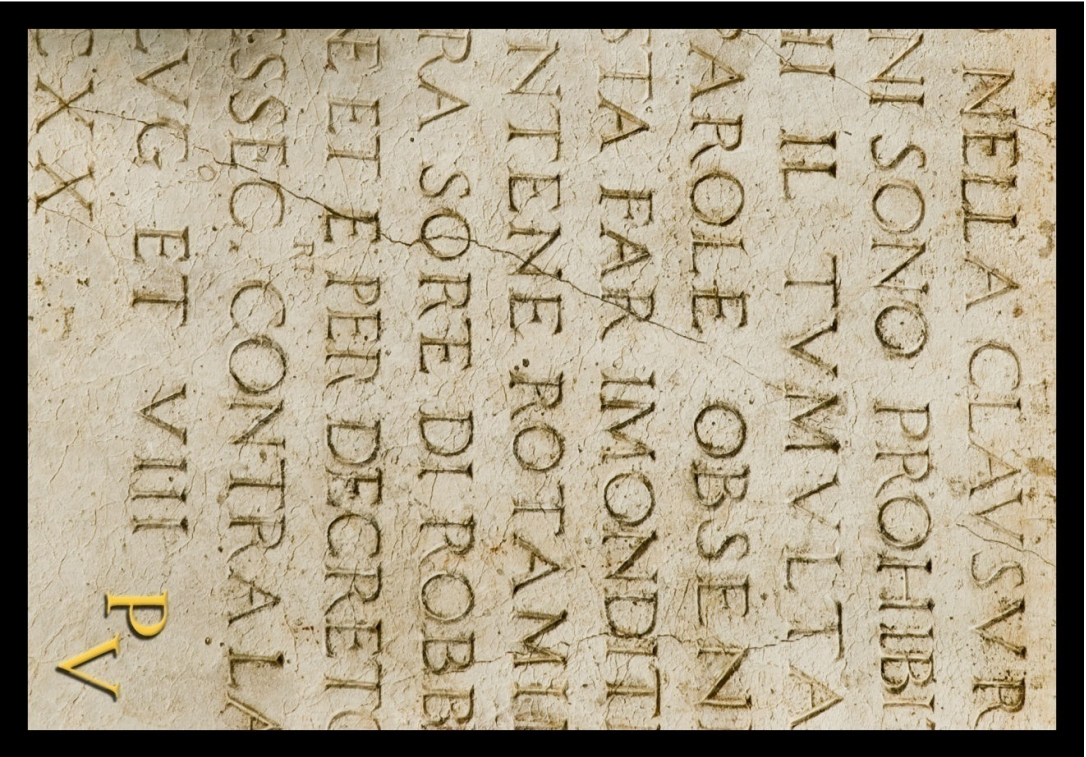


















### Collezione Arte pubblica di Venezia

Public art in Venice is endangered and needs your help. Contact PreserVenice, the newest Private Committee, to make your donation today! Call (041) 523 3209 or email [info@preservenice.org](mailto:info@preservenice.org).

Preser  
VENICE

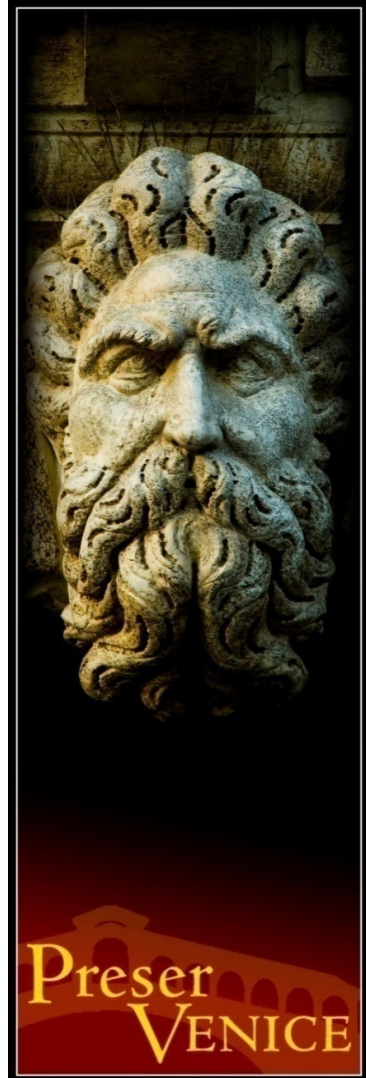


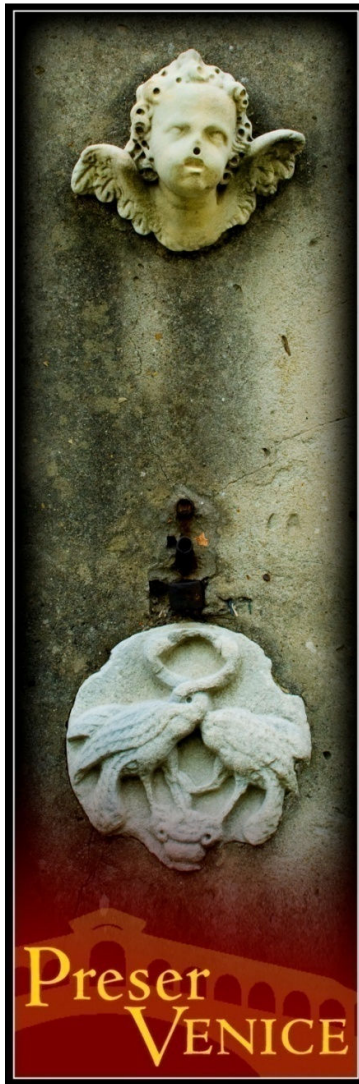
Photo: Kyle H. Miller 2007

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PreserVenice bookmarks:











**Appendix C: Non-profit organization bylaws**



**BY-LAWS**

OF

**PreserVENICE**

Established: Month dd, yyyy

BY-LAWS OF

## PreserVenice

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BY-LAWS OF  
PreserVenice

ARTICLE I. - NAME

The name of the Corporation shall be:

PreserVenice

and it is sometimes referred to in these By-Laws as the “Corporation.”

The organization shall have a seal which shall be in the following form:



ARTICLE II. - PURPOSES

The purposes that the Corporation is formed are those set forth in its Articles of Organization, as they may from time to time be amended. Currently these include:

- Restoring and conserving Venetian public art as it deems appropriate and in the public interest, and for enjoyment of present and future generations;
- Educating the public with regard to the importance of public art;
- Working with other organizations having similar purposes to assist and encourage restoration and conservation of public art.

ARTICLE III. - MEMBERS

1. Membership and Election: Any individual or organization interested in the work and purposes of the Corporation may become a member of the Corporation, subject only to compliance with the provisions of these By-Laws, any rules and regulations promulgated by the Board of Directors and payment of any dues established by the Board of Directors.

Membership in the Corporation shall be available without regard to race, color, creed, religion, or national origin.

2. Annual Meeting: The annual meeting of the members shall be held on the first Thursday of October of each year at such place and time as shall have been fixed by the Board of Directors or the President and stated in the notice of the meeting. The purposes that the annual meeting is to be held, in addition to those prescribed by law, by the Articles of Organization or these By-Laws, may be specified by the Board of Directors or by the President. If an annual meeting is not held in accordance with the foregoing provisions, a special meeting may be held in place thereof with all the force and effect of an annual meeting. The Secretary shall cause to be communicated to every member in good standing in this organization a notice telling the time and place of such annual meeting at least ten calendar days prior to the scheduled date of the meeting.

3. Special Meeting: Special meetings of the members may be called by the President. Notices of such meeting shall be communicated to all members at least ten calendar days before the scheduled date of the special meeting. The call for each special meeting shall state the date, time, place, and purposes of the meeting, and by whom it was called. At the request of 25% of the members of the Board of Directors or 25% of the members of the organization, the President shall cause a special meeting to be called but such meeting shall be made in writing at least fourteen days before the requested scheduled date.

4. Place of Meeting: Regular monthly meetings of the members shall be held at the \_\_\_\_\_ in Venice, Italy unless a different place (within Italy) is fixed by the Board of Directors or by the President and stated in the notice of the meeting.

5. Notice of Meetings: Communication of every meeting, annual and special, of the members, stating the date, time, place and the purposes of the meeting to be held shall be given by the Secretary, or by an Assistant Secretary, if there is one, or by the person calling the meeting, at least ten calendar days before the meeting.

6. Quorum: The presence of not less than 10% of the members shall be required to constitute a quorum for the transaction of business at all meetings of the members. In the absence of a quorum, any meeting may be adjourned for a period of not more than fourteen calendar days from the date scheduled by these By-Laws and the Secretary shall cause a notice of this rescheduled meeting to be sent to all those members who were not present at the meeting originally called. A quorum as herein before set forth shall be required at any adjourned and rescheduled meeting.

7. Action at Meetings: At all meetings, except for the election of officers and directors, all votes shall be by voice. For election of officers, ballots shall be provided and there shall not appear any place on such ballot that might tend to indicate the person who cast such ballot.

At any regular or special meeting, if a majority so requires, any question may be voted upon in the manner and style provided for election of officers and directors.

At all votes by ballot the chairman of such meeting shall, prior to the commencement of balloting, appoint a committee of three who shall act as "Inspectors of Election" and who shall, at the conclusion of such balloting, certify in writing to the Chairman the results and the certified copy shall be physically affixed in the minute book to the minutes of that meeting.

No inspector of election shall be a candidate for office or shall be personally interested in the question voted upon.

#### ARTICLE IV. - ORDER OF BUSINESS

1. Roll Call.
2. Reading of the Minutes of the preceding meeting.
3. Reports of Committees.
4. Reports of Officers.
5. Old and Unfinished Business.
6. New Business.
7. Adjournments.

#### ARTICLE V. - THE BOARD OF DIRECTORS

The business of this organization shall be managed by a Board of Directors consisting of seven members, together with the four officers of this organization. At least two of the directors elected shall be a resident of the Town of Spencer and another two residents of the Town of Leicester.

The directors to be chosen for the ensuing year shall be chosen at the annual meeting of this organization in the same manner and style as the officers of this organization and they shall serve for a term of one year.

The Board of Directors shall have the control and management of the affairs and business of this organization. Such Board of Directors shall only act in the name of the organization when it shall be regularly convened by its chairman after due notice to all the directors of such meeting.

Fifty percent of the members of the Board of Directors shall constitute a quorum and the meetings of the Board of Directors shall be held monthly following the regular membership meetings. Each director shall have one vote and such voting may not be done by proxy.

The Board of Directors may make such rules and regulations covering its meetings as it may in its discretion determine necessary.

Vacancies in the Board of Directors shall be filled by a vote of the majority of the remaining members of the Board of Directors for the balance of the year.

The President of the organization by virtue of his office shall be Chairman of the Board of Directors.

The Board of Directors shall select from one of their members a secretary.

A director may be removed when sufficient cause exists for such removal.

The Board of Directors may entertain charges against any director. A director may be represented by counsel upon any removal hearing. The Board of Directors shall adopt such rules for this hearing as it may in its discretion consider necessary for the best interests of the organization.

#### ARTICLE VI. - OFFICERS

The initial officers of the organization shall be as follows:

President

Vice President

Secretary

Treasurer

The President shall:

1. preside at all membership meetings.
2. by virtue of his office be Chairman of the Board of Directors.
3. present at each annual meeting of the organization an annual report of the work of the organization.
4. appoint all committees, temporary or permanent.
5. see all books, reports and certificates required by law are properly kept or filed.
6. be one of the officers who may sign the checks or drafts of the organization.
7. have such powers as may be reasonably construed as belonging to the chief executive of any organization.

The Vice President shall in the event of the absence or inability of the President to exercise his office become acting president of the organization with all the rights, privileges and powers as if s/he had been the duly elected president.

The Secretary shall:

1. keep the minutes and records of the organization in appropriate books.
2. file any certificate required by any statute, federal or state.
3. give and serve all notices to members of this organization.
4. be the official custodian of the records and seal of this organization.
5. be one of the officers required to sign the checks and drafts of the organization.
6. present to the membership at any meetings any communication addressed to him/her as Secretary of the organization.
7. submit to the Board of Directors any communications which shall be addressed to him as Secretary of the organization.
8. attend to all correspondence of the organization and shall exercise all duties incident to the office of Secretary.

The Treasurer shall:

1. have the care and custody of all monies belonging to the organization and shall be solely responsible for such monies or securities of the organization.
2. cause to be deposited in a regular business bank or trust company a sum not exceeding \$10,000.00 and the balance of the funds of the organization shall be deposited in a savings bank except that the Board of Directors may cause such funds to be invested in such investments as shall be legal for a non-profit corporation in the Republic of Italy.



3. must be one of the officers who shall sign checks or drafts of the organization. No special fund may be set aside that shall make it unnecessary for the Treasurer to sign the checks issued upon it.
4. render at stated periods as the Board of Directors shall determine a written account of the finances of the organization and such report shall be physically affixed to the minutes of the Board of Directors of such meeting.
5. exercise all duties incident to the office of Treasurer.

Officers shall by virtue of their office be members of the Board of Directors.

No officer shall for reason of his office be entitled to receive any salary or compensation, but nothing herein shall be construed to prevent an officer or director for receiving any compensation from the organization for duties other than as a director or officer.

#### ARTICLE VII. - SALARIES

The Board of Directors shall hire and fix the compensation of any and all employees which they in their discretion may determine to be necessary for the conduct of the business of the organization.

#### ARTICLE VIII. - COMMITTEES

All committees of this organization shall be appointed by the Board of Directors and their term of office shall be for a period of one year or less if sooner terminated by the action of the Board of Directors.

The permanent committees shall be:  
Legal, Membership, Fundraising and Education.

#### ARTICLE IX. - DUES

The dues of this organization shall be fixed by the Board of Directors per annum and shall be payable by the September meeting.

#### ARTICLE X. - AMENDMENTS

These By-Laws may be altered, amended, repealed or added to by an affirmative two-thirds vote of the members present at any meeting for which notice under these By-Laws was given and at which a quorum is present.

## **Appendix D: Results from search for missing pieces**

### **CN 16**

Verdict: Missing, house demolished and new concrete foundation laid. In December 2007, construction is ongoing.

### **CN 182A**

Verdict: Missing.

### **CN 237**

Verdict: Unsure. Need a boat.

### **CN 240A/B/C/D**

Verdict: Unsure. Need a boat.

### **CN 286B**

Verdict: Not missing.

### **CN 345**

Verdict: Missing.

### **CN 367**

Verdict: Missing.

### **CN 382**

Verdict: Unsure. Behind scaffolding and need a boat.

### **CN 420C**

Verdict: Not missing.

### **CN 427B**

Verdict: Unsure. Need a boat.

### **CS 148**

Verdict: Not missing. Address is incorrect; change to 2740 Calle del Cimitero.

### **CS 280**

Verdict: Missing.

### **CS 313**

Verdict: Not missing.

### **CS 346**

Verdict: Missing.

### **DD 4**

Verdict: Maybe. Scaffolding.

### **DD 6**

Verdict: Missing.

**DD 7**

Verdict: Missing.

**DD 57**

Verdict: Missing.

**DD 59**

Verdict: Missing.

**DD 86**

Verdict: Missing.

**DD 88**

Verdict: Not missing. Address is incorrect; change to 873/B Calesele Rota.

**DD 89**

Verdict: Not missing.

**DD 91**

Verdict: Missing.

**DD 157**

Verdict: Missing.

**DD 200**

Verdict: Missing.

**SC 55**

Verdict: Missing. This calle doesn't seem to exist anymore, and a locked doorway covers what may have once been the entrance. There is an address given for SC 559, but not SC 559/C.

**SC 90**

Verdict: Missing.

**SC 154**

Verdict: Missing.

**SC 171**

Verdict: Not missing.

**SM 14**

Verdict: Not missing. MapInfo dot is in the wrong place.

**SM 106B**

Verdict: Not missing.

**SM 144**

Verdict: Missing.

**SM 150**

Verdict: Missing.

**SM 297**

Verdict: Missing.

**SM 340**

Verdict: Not missing.

**SM 349**

Verdict: Missing.

**SP 11**

Verdict: Maybe. Image of saint present on a column, but needs identification.

**SP 51C**

Verdict: Not missing. Easily seen from the Bancogiro.

**SP 89**

Verdict: Could not find, but 2000 project has a photo.

**SP 100E**

Verdict: Maybe. Behind fence and gratings and bushes, but did see one fragment against foundation of building. Not really public.

**SP 107B**

Verdict: Not missing.

**SP 240**

Verdict: Not missing.

**SP 255**

Verdict: Maybe missing. Some scaffolding was set up, but no evidence of any public art was seen besides pillared ornamental corners.

**SP 346**

Verdict: Not missing.

**SP 347**

Verdict: Maybe; couldn't locate.

## Appendix E: Prioritization algorithm explanation

**Codice:** Rizzi's code for the object, matching to the entry in his printed catalog; not considered

**Civico:** Sestiere code and address; not considered

**Sestiere:** Sestiere code; not considered

**Indirizzo:** Street name; not considered

**Anno:** Year, approximate or exact. Some years are unknown, and were assigned an average rating (2)

Earliest year: 300 AD

Latest year: 1860 AD

Range: 1560 years

Divide by 5: interval is 312 years

Ratings: 4 = 300 to 612

3 = 613 to 924

2 = 925 to 1236 or 0

1 = 1237 to 1548

0 = 1549 to 1860

**Materiale:** Material making up the object. The assumption was made that Greek marble is plentiful and thus not as important; the same for Istrian stone to an even higher degree.

Categories were simplified and standardized to the following categories:

Ratings: 4 = legno

3 = terracotta, stucco

2 = aurisina, carrara, costozza, marmo, nanto,  
pietra, tenera, verde, verona

1 = greco

0 = altro, istria

**Tipo:** Type of object, used to determine rarity.

Ratings: 4 = scultura

3 = patera, edicola, rilievo

2 = croce, simbolo, stemma

1 = decorazione

0 = iscrizione, camino, frammento

**Sottotipo:** Subtype; not considered

**Iscrizione:** Whether an inscription is present, as determined by whether text exists in the "iscrizione" field.

Binary rating: 4 = has inscription

0 = has no inscription

**Note:** Rizzi's notes on condition and other factors. We eliminated anything not pertaining to condition and standardized the terminology.

Ratings: 4 = lesione (lesions), corrosione (corrosion), abrasi (abrasion)  
 3 = disgregamento (broken up), fratture (fracture)  
 2 = danni (damage), degrade (degraded), illegibile (illegible),  
 esfoliazione (exfoliation), sbrecciato (busted)  
 1 = sporco (dirty), annerito (blackened), manca (missing)  
 0 = no note provided

**Famiglia:** Whether a family is identified with the piece (typically for stemmi)

Binary rating: 4 = family known

0 = no family given

**Autore:** Whether a sculptor is identified

Binary rating: 4 = sculptor known

0 = no sculptor given

**Soggetto Generale:** We eliminated the Soggetto column and combined it with the Soggetto Generale one, replacing "religioso" with the appropriate sub-category (usually "simbolo" or "persona") and "altro" with whatever could classify it more precisely (e.g., an "altro" object with the subject of "fenice" was modified to become "Fauna").

Ratings: 4 = persona, madonna, angelo, cristo, santo, busto,  
 3 = fauna  
 2 = flora  
 1 = simbolo  
 0 = no subject given

**Conservazione Rizzi Numere:** For reference comparisons (high numbers mean good condition)

**Conservazione Numere:** For reference comparisons; from past IQPs that assigned their own #

**Residential Area:** Whether the object exists in a residential area (quiet street, houses)

True: Location = 2

**Tourist Area:** Whether the object exists in a tourist area (e.g., near the Rialto)

True: Location = 4

**Commercial Area:** Whether the object exists in a commercial area (near shops)

True: Location = 3

**Church:** Whether the object exists in the vicinity of a church

True: Location = 2

**Phone Wire, Electric Wire, Other Wire:** True: Wire = 2

**Iron Present, Other Metal:** True: Metal = 4

**Hooks:** True: Metal = 3

**Tiranti:** True: Metal = 4

**Shutters:** True: Risk = 3

**Pipes:** True: Risk = 4

**Flower Pots:** True: Risk = 1

**Height, Width:** Dimensions of an object, when given.

> 301cm, dimension = 4

221 to 300cm, dimension = 3

141 to 220cm, dimension = 2

61 to 140cm, dimension = 1

0 to 60cm, dimension = 0

**Diameter:** Dimension of a circular object, when given.

> 61cm, dimension = 1

0 to 60cm, dimension = 0

**Distance from Ground:** The measurements in this field do not all agree, unit-wise, and some are clearly incorrect. We have not included this field in our prioritization, but are keeping it because it could be useful for future efforts if the numbers are checked and cleaned up.

**Surface Area:** The surface area of the object, calculated in whatever manner previous projects chose. We selected the interval of 800 because it gives a reasonably even distribution between all of the objects that have measurements for surface area provided.

Ratings: 4 = 3201 and up

3 = 2401 to 3200

2 = 1601 to 2400

1 = 801 to 1600

0 = 0 to 800



## Appendix F: Top 100 restoration priority

These are the objects that, with the weightings we chose, are ranked in the top 100 for priority of restoration.

1	SM010	26	DD184	51	CN163	76	CS326
2	CN177D	27	CS006	52	CS319	77	SM085B
3	CS166	28	CS007A	53	SM161	78	CN150
4	CN281A	29	CS007B	54	SM145	79	CS012
5	CN177A	30	CS007C	55	CN074C	80	CS117
6	CS018	31	SC169	56	CN281B	81	DD195
7	DD232	32	CN461	57	CN281D	82	CN072
8	CS286	33	CN456	58	CN086	83	CN183
9	CS388	34	DD349	59	CN212	84	CS408A
10	SC046	35	CS269	60	SM373	85	SM236
11	DD136	36	CN018	61	SC059	86	SP357B
12	CN017	37	DD163	62	CS046	87	SP234
13	CS245	38	CN177C	63	SC008	88	SP270
14	CN452	39	SM136B	64	SC056E	89	SP322
15	DD096B	40	CS037	65	CN068	90	CS169A
16	CS009	41	CS201	66	CS120	91	CN178
17	CS141	42	CS095	67	CS192	92	CN313
18	SP168A	43	CN190	68	SM136D	93	SP109
19	SP168B	44	DD259	69	SP144B	94	SP329
20	DD180	45	DD307	70	SP144C	95	SC003
21	SP269	46	SC065	71	SP090	96	DD126
22	SC134	47	CN107	72	CS196B	97	CN413
23	SP232	48	SP298	73	CN108	98	SP146E
24	CS087	49	CN153	74	CS094B	99	SP227B
25	SM188A	50	SC058	75	CN073	100	CS212

## Appendix G: Current State of Public Art Cataloging

### Erratic Sculpture

Includes crosses, patere, coats of arms, symbols, reliefs, sculptures, street altars, statues, inscriptions, decorations, and fragments.

- Scultura Esterna a Venezia (External Sculpture of Venice) by Alberto Rizzi
- EarthWatch:
  - 1994: Cataloged erratic sculpture in Murano, Malamocco, Mazzorbo, Pellestrina, Burano, Chioggia, S. Nicolo, Dorsoduro, and S. Francesco del Deserto
  - 1995: Cataloged erratic sculpture based on Rizzi's catalog on Giudecca and Chioggia
- WPI:
  - E95: Computerized Catalog of Public Art in Dorsoduro
  - E00: The Forgotten Art of Venice: Promoting the Conservation and Awareness of External Sculpture
- Revisited the cataloged erratic art pieces in Venice and took new pictures, recorded the neighborhood and if the piece was missing or endangered

### Portali and Lunette

- E02: Portali e Lunette: A Multimedia Catalog for the Preservation of Venice's Artistic Entrances
  - Photographed and located lunette and portali in Venice, Murano, Burano, Torcello, and Mazzorbo
  - Completed condition assessments and photos for portali in Castello
- E03: Preservation and Restoration of Venetian Public Art
  - Located 413 of 534 portali in Venice (photographed)
  - Completed physical and condition assessments and photos for lunette in Venice and Lagoon Islands
- B07: PreserVenice: Venetian Public Art
  - Conducted assessments of portali on Murano, Burano, Mazzorbo, and Torcello
- Gaps:
  - Remaining physical and condition assessments and some photos for portali outside of Castello (Cannaregio, San Marco, Dorsoduro, Santa Croce, and San Polo) and on any remaining lagoon islands

### Monuments

- E03: Preservation and Restoration of Venetian Public Art
  - Completed physical and condition assessments and photographed all monuments in Venice
- Gaps: Monuments on Lagoon Islands (if any exist on the islands)

### Wellheads

- 1981: Vere da Pozzo di Venezia (The Wellheads of Venice) by Alberto Rizzi: Catalog of all of the public wellheads in Venice
- EarthWatch
  - 1992: Cataloged Public Wellheads in Cannaregio
  - 1996: Cataloged Wellheads on Torcello and Burano
- E00: Preserving Venetian Wellheads
  - Completed assessments and cataloging of all public wellheads in Venice and Giudecca
- E04: Public Art Preservation in Venice: Non-public Wellheads and Fountains
  - Completed assessments and cataloging of the semi-public and private wellheads that they could obtain access to in Venice and Giudecca
- B07: PreserVenice: Venetian Public Art
  - Cataloged and assessed wellheads on Murano and Mazzorbo
- **Gaps:**
  - Any semi-public or private wellheads not catalogued yet
  - Catalog wellheads on any remaining lagoon islands

### Fountains

- E04: Public Art Preservation in Venice: Non-public Wellheads and Fountains
  - Completed assessments of fountains in Venice and Giudecca
- **Gaps:** Locating and assessing fountains on the lagoon islands

### Mascaroni

- 1995: EarthWatch cataloged mascaroni in Murano, Castello, San Croce, San Polo, San Marco, Dorsoduro, and Giudecca
- E95: Computerized Catalog of Venetian Decorative Keystones
  - Completed assessments of bridge mascaroni in Venice
  - Completed assessments of any other mascaroni (doors and windows) in Cannaregio
- B07: PreserVenice: Venetian Public Art
  - Completed assessments of mascaroni on Burano, Mazzorbo, and Torcello
- **Gaps:**
  - Locating and assessing any non-bridge mascaroni in Venice outside of Cannaregio
  - Locating and assessing any mascaroni on the remaining lagoon islands

### Flagstaff Pedestals

- E97: A Computerized Catalog of Flagstaff Pedestals in Venice, Italy
  - Completed assessments of pedestals in Venice
- B07: PreserVenice: Venetian Public Art
  - Completed assessments on Murano, Burano, Torcello, and Mazzorbo
- **Gaps:** Pedestal assessments on any remaining lagoon islands

## Appendix H: Book Chapter – Final Draft

### Public Art



**Figure 26: When every piece of public art in Venice is placed on a map, they are dense and widely-distributed enough to define the layout of the city.**

Venice is a vibrant museum-city that welcomes over 16 million tourists every year. These visitors swarm the familiar sights of Saint Mark's Square, the Doge's Palace and tour the Grand Canal, yet overlook the smaller, more remote pieces of public art that decorate the city. Unfortunately, ignorance by tourists, disregard by Venetians, and the damaging effects of nature are contributing to the deterioration of the city's public art. Conserving Venetian public art would help to preserve the heritage and culture of the city, but conservation's greatest threat is ownership. Most public art is located on the exterior of privately-owned buildings, yet the government legally owns the art. Consequently, Venetian public art exists in a grey area where nobody claims responsibility for its maintenance; thus, public art in many places is succumbing to atrophy.

Nevertheless, scholars and other groups interested in preserving public art have made significant contributions to art preservation in the city. Alberto Rizzi, an expert on Venetian architecture and sculpture, assembled a pioneering catalogue in the 1970s and 80s, publishing *Scultura Esterna a Venezia* ("Outdoor Sculpture in Venice") in 1987. Using Rizzi's catalogue as a base model, more than 50 students at the Worcester Polytechnic Institute added to the original database and produced a digital version, complete with dynamic maps, digital photographs, and detailed condition information.

With the additions have come changes to the working definition of "public art"; while Rizzi defined public art as being nonstructural and integrated into buildings, the WPI catalogue now includes structural elements, wellheads, and flagstaffs. The fifteen types of Venetian public art are divided into two categories: erratic and non-erratic. Erratic art are the small, artistic sculptures scattered throughout the city. *Patere, relievi*, crosses, inscriptions

and fragments are all erratic art. The ten remaining types of public art are non-erratic. Non-erratic art is both decorative and functional. Structural art such as *portali*, *lunette* and *mascaroni* act as ornate, load bearing parts of buildings. Coats of arms and confraternity symbols are proprietary art – they denote ownership of buildings. Statues and monuments commemorate historical and mythological events in Venice. Flagstaff pedestals, wellheads and fountains all provided a social utility to ancient Venetians.

The following sections illustrate different types of public art found throughout Venice and the importance of each.

### ***Patere***

*Patere* are the small, typically circular reliefs dotting the sides of buildings throughout Venice. Their shape originates from the way they were made, often sculpted from slices of old marble columns that had been replaced in past renovations of a building. Usually 20 to 80 centimeters across and only eight or so centimeters deep, *patere* exist in six categories: flat, low/medium relief, high relief, curved, *champlevé*, and drilled, named according to their sculptural topography. Flat *patere* are the oldest category. Fashionable in the 12<sup>th</sup> to 14<sup>th</sup> centuries, *patere* were seen by Venetians as superstitious charms that could protect a household from vice or evil, keeping it at bay. The motifs on *patere* are widely varied, with about 150 different images accounting for the majority of their designs. One very common image is that of an eagle eating the head of a rabbit, representing the victory of virtue over vice. Another common theme, thought to represent harmony, depicts two flamingos with their necks intertwined, sometimes drinking or eating from the tree or fountain of life.<sup>25</sup>



**Figure 27: An eagle pecking the head of a lion or leopard in a typical example of Byzantine imagery.**

*Patere* are products of Byzantine culture, a dynasty that produced many Venetian treasures. They are also the oldest type of Venetian public art. *Formelle*, a related type of public art, are also considered part of the *patere* collection, because they share many of the same graphical motifs. *Formelle* are larger than *patere*, and are characterized by a rectangular shape capped with a rounded arch, rather than being circular.

Collections of *patere* and *formelle* grace the facades of such Venetian structures as the *Ca' Donà de la Madoneta*, the *Ca' Cappello a Castelo*, and the *Ca' Vitturi* in the *Campo Santa Maria Formosa*, as well as the *campanile* of *San Aponal*, and a wall near the *Ponte de le Oche*. There are approximately 1,200 known *patere* in the entire world<sup>26</sup>; Venice is home to 471 of them. An additional 11 can be found on lagoon islands. Seven *patere* have disappeared from Venice.

### **Crosses**

Venice, as it exists today, was little more than marshy swampland until after Christianity had become a well-established religion in Europe, and the crosses that appear throughout the city are almost exclusively symbols of that religion. Given the number of

<sup>25</sup> Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 17.

<sup>26</sup> Elbag, Mark et al. *Preservation and Restoration of Venetian Public Art*. 2003. Pg 18.



churches in Venice (142 currently, but closer to 1,000 in the sixteenth century), there are fewer crosses decorating the city than one might expect. This is especially surprising when the number of crosses is compared to that of other pagan symbols like *patere*. However, as the expression so pointedly proclaims, "*Siamo Veneziani e poi Christiani*," ("We are Venetians first, then Christians"), it was more important to the largely insular Venetian community to declare political and mercantile allegiances than religious ones.



**Figure 28: Greek, Maltese and Roman crosses**

intersected near the top by a shorter crossbeam. Greek and *pattée* crosses have all arms of equal length; the Greek form uses uniformly-shaped beams, while Maltese and *pattée*-style crosses, some with origins in the Italian republic of Amalfi, have arms that narrow towards the center of the symbol.

As one might expect, crosses can often be found in the areas surrounding churches. Of the 74 crosses in the public art catalog in Venice, 28 are located in actual church *campi*, and 7 additional crosses are located on the streets surrounding churches. Lagoon islands account for an additional 6 crosses, a small but not entirely unexpected number, considering the relative number of churches on islands outside of Venice proper. Two crosses are currently recorded as missing.



**Figure 29: A relief depicting the column and lion in the Piazza San Marco**

### **Relievi (Reliefs)**

A relief is a piece of sculpture that protrudes from a wall. The subject matter for reliefs generally concerns religious scenes or significant events. Serving as a reminder of an important occurrence or event in Venice, reliefs help to remind Venetians of their history and of related mythology.

Reliefs also provide examples of the artistic styles popular in Venice hundreds of years ago, and demonstrate to historians the legends that certain neighborhoods held dear. Reliefs depicting Saint George slaying the dragon are particularly popular, with Rizzi's catalogue listing 16 throughout Venice. Reliefs are categorized by the percentage of the sculpture that protrudes from the wall. A low relief (*bas-relief* or *bassorilievi*) has less than half of its depth protruding from the wall; a high relief (*haut-relief* or *altorilievi*) has more than half.

Venice is home to 386 reliefs.<sup>27</sup> Another 40 exist on the lagoon islands. Four reliefs have been noted as missing.

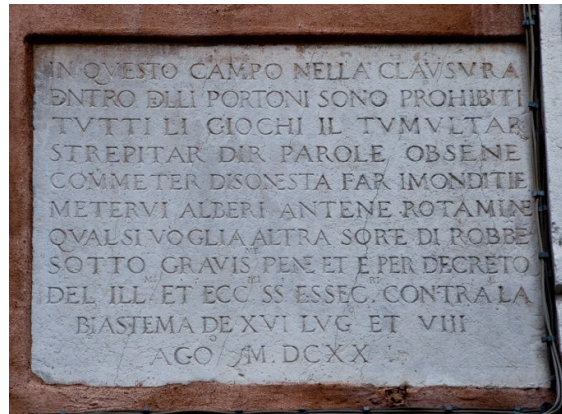
<sup>27</sup> Insula Quaderno. November 2002. Page 14. Anno 4. Numero 13.

## Inscriptions

Inscriptions are simply words that have been carved into stone and displayed in public locations. They usually display historical or religious messages, but can also serve as memorials. Typically written in old Venetian or pseudo-Latin, inscriptions were often produced to commemorate a prominent person or significant event. Their function is purely informational, but they now add to the artistic atmosphere of Venice, too.

The inscription in the Campo San Zaccaria is one of the best examples of this category, in part because it is in good shape, but also because of the information it contains. A rough translation could be, "In this campo, near the cloisters behind these doors, the following are prohibited: games and making a ruckus, loudly uttering bad words, being dishonest, leaving garbage, planting trees, nor any other such type of thing. Under grave penalty and by the decree of the most illustrious and most esteemed Lord Executioners Against Blasphemy. July 16 and August 8, 1620." While they are often low in artistic value, inscriptions do provide insight, sometimes even humorous, into the lives of ancient Venetians.

There are 28 inscriptions throughout the streets of Venice.<sup>28</sup> A further nine can be found on lagoon islands.<sup>29</sup> No inscriptions have been found missing, perhaps because they are of little value to treasure hunters.



**Figure 30: The inscription in the Campo di San Zaccaria.**

## Fragments

Fragments (*frammenti*), like their name suggests, are small broken pieces of other artwork. When larger carvings were destroyed, the remains were often discarded. However, on occasion, remaining fragments were spared and often set into a wall. The fragment is not an intentional piece of artwork; no one makes fragments. Instead, they are the leftovers from grander objects that no longer exist. While they may have once been part of an important artistic sculpture, they are no longer of much significance.



**Figure 31: An architectural fragment, most likely left over from a decorated window arch**

There are 251 fragments in Venice, and 31 in the lagoon islands. Six fragments are recorded as missing.

<sup>28</sup> Insula Quaderno. November 2002. Page 14. Anno 4. Numero 13.

<sup>29</sup> Rizzi, Alberto. *Scultura Esterna a Venezia*. 1987.





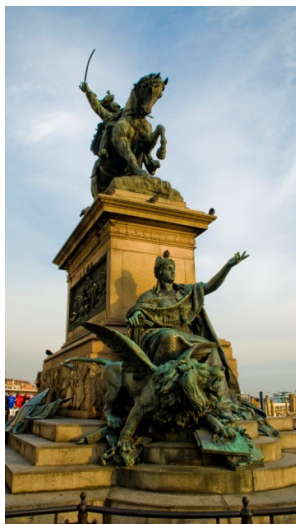
**Figure 32:** The façade of the church of the Madonna della Salute is adorned with statues.

## Statues

In Venice, statues are indicators of the importance and status of a building. A statue is a sculpture that is not embedded directly in a wall, but is structurally attached to a building in some way. Statues are often found accentuating the roofs of important buildings and churches and add figurative, often human, elements to the building's architecture, augmenting its overall beauty and visual



**Figure 33:** The Saint Mark's Library balustrade is decorated with statues depicting mythical figures.



**Figure 34:** A monument to Vittorio Emanuele II on the Riva degli Schiavoni

interest. In Venice, statues are almost always found on buildings of significance, most often churches. Venetian practices did not always permit ostentatious ornamentation, but statues could be used to symbolize the wealth, power, and distinction of certain groups of the population.

Longhena's iconic Baroque church, *Santa Maria della Salute* in *Dorsoduro*, is worth noting because of the statues adorning its exterior, including figures of angels and other biblical characters. It is one of the most spectacular examples of this category of external sculpture in Venice. The *Salute's* collection is representative of the general thematic content of most Venetian statues, which typically feature angels, the Virgin Mary, and other important Christian icons (e.g., the saint of the local parish). Just across the Grand Canal is the *Libreria Marciana*, the balustrade of which is decorated with many mythological figures that animate the roof of the building. There are 173 statues that are classified as "public art" in Venice, and an additional 11 are found on islands in the Venetian lagoon. One statue, a Madonna with the infant Jesus, was found missing during cataloguing in 2000<sup>30</sup>.

## Monuments

Unlike many cities with rich histories, Venice has surprisingly few monuments. This is a result of the unique statutes that governed the Venetian Republic for hundreds of years, prohibiting the elevation of one individual above others in the city, along with the city's unique pattern of development. Early Venetian citizens were concerned with their safety and

<sup>30</sup> Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 17.



survival on the barren and soggy islands of the Venetian lagoon. After the city had grown and began to take its present shape, a shortage of land became the more pressing issue. By the time Venice developed into a major European capital and citizens began erecting monuments, virtually all public land had been already spoken for, by churches, *campi* (public squares), and the like. Laws went further, preventing the construction of free-standing statues in an



**Figure 35: A map showing the distribution of monuments in the Giardini.**

effort to reduce fighting between wealthy and powerful families who might perceive one individual being declared more important than any other.

As a result, the vast majority of monuments in Venice today postdate the fall of the Venetian republic in 1797. The densest area for monuments in the city is, by far, the *Giardini* of Castello, one of Napoleon's "improvements" to Venice.

Thirty seven – more than half – of the 67 monuments in Venice are located in these gardens, and the rest are scattered throughout the city. One statue of note is Andrea del Verrocchio's monument to Bartolomeo Colleonio. Colleonio, a Venetian mercenary, left his fortune to the city in the fifteenth century with the condition that a monument would be constructed in his honor "in front of San Marco." Because Venetians would be vehemently opposed to the construction of a monument in the *Piazza San Marco* where Colleonio had intended, the nonetheless impressive statue was instead placed in front of the *Scuola Grande di San Marco*, in the *Campo di SS. Giovanni e Paolo*.

Unlike most other public art in Venice, monuments are usually constructed from bronze or tenera stone. Their bases are typically made of Istrian marble.<sup>31</sup> While a number of monuments are fenced in, the majority are vulnerable to damage from people sitting on them, kicking soccer balls against them, and other detrimental human forces. Notable monuments include the above-mentioned one to Colleonio, the monument to Vittorio Emanuele II on the Riva degli Schiavoni, and the large collection in the *Giardini*.



**Figure 36: Verrocchio's monument to Bartolomeo Colleonio in the Campo di Santi Giovanni e Paolo.**



**Figure 38: A stemma (coat of arms) belonging to the Marcello family.**

### **Stemmi (Coats of Arms)**

In Europe, coats of arms have long served as decorative and highly recognizable symbols of patrician families. They appear most frequently in Venice as stone carvings on the external walls of structures owned by wealthy and powerful Venetian nobles. Families like the Contarini, Barbarigo, Cappello, Foscari, Giustinian, Loredan, Marcello, Morosini, and Pisani owned

properties all over Venice (their names are still attached to many famous *palazzi* today), and at least one family crest would



**Figure 37: A blank stemma, the previous family's symbols having been removed when new owners took possession of the**

<sup>31</sup> Insula Quaderno. November 2002. Pg 26. Anno 4. Numero 13.

be required for each structure; hence, the significant amount of these types of public art objects.

Coats of arms, or *stemmi*, were not thought of as lasting artistic legacies, and details were often erased if a new family was to take ownership of a building. As such, a number of them are now blank, illegible, or missing entirely. Coats of arms in Venice span the Gothic, Renaissance and Baroque periods, and almost all use the shield as their basic design. Gothic *stemmi* feature geometric elements like circles, rectangles, and simple shields. Renaissance



**Figure 40: An Erizzo family "talking" stemma, with a porcupine (or "rizzo" in Venetian)**

*stemmi* became more elaborate, featuring leaf-like decorations, scrolls, and additional flourishes. In keeping with architectural styles, baroque *stemmi* were even more ornate and complex.<sup>32</sup>

One particular category of *stemmi* is special because of the way it communicates information about its owner: known as "talking" coats of arms, these *stemmi* use symbols with a pictorial or phonetic

reference to the name of the family being represented. Some



**Figure 39: A Dolfin family "talking" stemma, featuring three dolphins**

of the more obvious examples include the Dolfin family (a dolphin), the Da Ponte family (a bridge), and the Dalle Rose family (roses). The Barbarigo family used a beard on their stemmi, because "*barba*" is Italian for beard. Even more creatively, the Erizzo family used the letter "E" and a porcupine as their family symbol, as "*riccio*" is an Italian word for porcupine, or "*rizzo*" in the Venetian dialect.<sup>33</sup> For a pictorial example of the Erizzo family *stemmi*, see Figure 15.

Venice contains 1064 *stemmi*, and the lagoon islands contain 99, together far outnumbering any other category of external sculpture in the Venetian lagoon. Sixteen *stemmi* have been reported missing in Venice since 2000.



**Figure 41: A confraternity symbol from the Scuola Grande di San Rocco**

### Confraternity Symbols

Confraternity symbols are similar to coats of arms, but instead of patrician families, they indicate that the confraternities, or *scuole*, of Venice are the property owners. They are often placed prominently on buildings associated with each *scuola*, and also adorn houses and buildings owned by members. Venetian *scuole* were organizations brought together by a common craft or trade, also typically having a patron saint. To a degree, the *scuole* united the secular and sacred life of the city. Venice's confraternities were known for their charitable work, and they also acted as a support system for members in need.

<sup>32</sup> Ibid. Pg. 9

<sup>33</sup> Bender, Michael et al. The Forgotten Art of Venice. 2000. Pg 118.

There were six *scuole grande* in Venice: San Rocco, Santa Maria della Carità, San Giovanni Evangelista, Santa Maria in Valverde, Santa Maria del Carmelo, and San Marco. The six *scuole grande* were the largest and best-known of the greater collection of *scuole* in Venice. All *scuole* held meetings, ceremonies, and religious services within their walls; services were often held in the main halls, often ornately decorated and featuring notable



**Figure 42: A confraternity symbol indicating residence or ownership by a member of the Scuola Grande di Santa Maria della Carità**

works of art. Venice has 196 confraternity symbols, with two others on lagoon islands.<sup>34</sup> The *scuole* only existed in Venice proper, so it would be rare for properties outside of the city to be associated with them strongly enough to warrant a symbol. Seven confraternity symbols have been reported missing.

### **Portali (Portals)**

*Portali*, or portals, are entranceways to buildings or courtyards that serve both a structural and decorative purpose. *Portali* also include doorways with sculptures affixed to their tops or with artwork that flows into the doorjambs. The main purpose of a *portale*, besides its obvious structural function, is to convey a sense of affluence and grandeur to those entering and passing by the building. On private homes, wealthy families would often incorporate their coat of arms into the *portali*. Besides these familial signs, a number of *portali* also contain reliefs, sculptures, planters, or inscriptions. In particular, *portali* on churches frequently include reliefs of biblical scenes, or sometimes the image of the saint for which the church is named.



**Figure 43: An imposing portale and matching lunetta**

In Venice alone, there are 534 *portali*; while in the surrounding lagoon islands of Murano, Burano, Torcello, and Mazzorbo, there are an additional 18 *portali*. The *sestieri*, or districts, of San Marco and Castello contain the most *portali*, respectively 25 percent and 21 percent of the total number of *portali* in Venice. Historically, these neighborhoods were predominately residential, and therefore, money was spent on the appearance of the buildings to give an impression of family wealth and importance. Conversely, Cannaregio and San Polo contain the fewest *portali*, at four percent each. These *sestieri* were traditionally commercial and less affluent areas, so less attention was paid to the buildings' ornamentation.

<sup>34</sup> Insula Quaderno. November 2002. Page 10. Anno 4. Numero 13.



## Lunette



**Figure 44: The most important Byzantine lunetta in Venice, at the entrance to the Basilica di San Marco**

*Lunette* are a particular subset of portali; these decorative arches span the tops of doorways and serve both a structural and aesthetic purpose. In Italian, *lunetta* essentially means "half-moon," describing the decoration's semicircular shape. *Lunette* typically surround artwork from a number of artistic mediums, styles, and themes. There are three prominent styles of *lunette* in Venice: Byzantine, Gothic, and Renaissance. Byzantine *lunette* date back to the 12<sup>th</sup> century and are distinguished by their dome shape and

religious themes. Gothic *lunette*, popular between the 12<sup>th</sup> and 15<sup>th</sup> centuries, are characterized by pointed arches, which are generally larger and contain more elaborate detail than other styles. During the 15<sup>th</sup> and 16<sup>th</sup> centuries, Renaissance

*lunette* appeared, with more elegant decorations and simpler subjects, such as the sole image of a saint or the Madonna.

Just as there are various styles of *lunette*, there are also a variety of materials and techniques used in their construction. Fifty-one percent of the *lunette* in Venice are made of Istrian stone, 24 percent are marble, 12 percent brick, seven percent tile, four percent paint, and two percent wood or metal. Istrian stone was a popular choice, because it is durable and



**Figure 46: A gothic lunetta with paint still present.**

relatively non-porous, allowing sculptures to endure in the damp Venetian climate. Besides the differences in materials, Venice's *lunette* also exhibit a variety of artistic techniques and media. The most popular is relief, accounting for 78 percent of all *lunette*, followed by 11 percent mosaic, seven percent sculpture, and four percent fresco.

There are 71 *lunette* in



**Figure 45: A Renaissance lunetta**

Venice; Cannaregio and Castello contain the greatest number, at 22 percent each. Most *lunette* are found on *palazzi* and churches because, in general, only wealthy families and institutions could afford them. Forty-five percent of all *lunette* can be found in residential areas and 23 percent on churches, monasteries, or convents. The remaining 23 percent of *lunette* are located in commercial areas.

### ***Mascaroni***

Decorative keystones, or *mascaroni*, play both an artistic and structural role in the buildings to which they are attached. They contribute to both the art and architecture of Venice. A keystone finishes an arch; it is the last stone to be placed, making the arch strong and increasing its capability to support weight. As the visual center of an arch, a keystone is an integral element in the aesthetic design of a structure and connects the arch with the horizontal moldings that run above it. It may project horizontally beyond the rest of the arch, and keystones are often decorated with masks or figures. The heads and coats of arms that decorate keystones have artistic and historical value, too, but usually fail to attract attention from the public and historical conservation efforts.<sup>35</sup>

Keystones are commonly made from Istria stone, which is hard, waterproof, and easily workable. Its unique characteristics are the reason that much of Venice's public art remains in good condition (and in many cases still legible) today. Keystones are located on bridges, doors, and windows throughout all the *sestieri* of Venice. In 1995, WPI students documented and photographed 307 keystones in Venice. Forty-three percent of the total arches catalogued are doors, 29



**Figure 47: A decorative keystone, or *mascarone***



**Figure 48: A bridge keystone decorated with three *stemmi***

percent are bridges, and 27 percent are windows. The remaining one percent consists of tunnels and one unusual piece – a decorative keystone head on an opening that once housed another piece of outdoor art.<sup>36</sup>

The distributions of the different kinds of arches in which keystones appear are quite even. Doors account for the largest portion of the total number. The number of decorative keystones on bridges is relatively small, however, accounting for only 88 keystones, on 78 out of over 400 bridges in Venice. It was determined that most of the bridges studied had only one decorative keystone.

*Stemmi* (coats of arms) are the most common decoration for keystones on Venetian bridges. Eighty-seven of the 88 bridges evaluated have *stemmi* as a keystone decoration. Only a few *stemmi* are found on doors and other arches. Only one bridge contains a head as a decorative keystone. The rest of the heads can be found on doors, windows, and other types of arches. Doors have the greatest number of heads as keystone decoration. Together, decorative keystones on the windows and doors were all heads with exceptions of four *stemmi* on doors. Doors and windows are often decorated with keystone heads, usually somewhat grotesque, to drive away evil spirits as well as potential human intruders.

Decorative keystones are also subject to damage. Of the total 307 pieces that were evaluated, the most common type of damage was a feature missing from a *stemma*. Forty-five *stemmi* pieces were found with at least some part of the shield missing. Some heads were also missing either the nose or the hair, and a few did not have any eyes. Very few were missing wings or chins.<sup>37</sup>

<sup>35</sup> Ayetut. Computerized Catalog of Venetian Decorative Keystones. Pg 3.8–3.9, 6.1.

<sup>36</sup> Ibid. pp. 6.2–6.7.

<sup>37</sup> Ayetut. Computerized Catalog of Venetian Decorative Keystones, pp. 6.3–6.7.

### Flagstaff Pedestals

The winged lion is the principal symbol present in Venetian artwork; it is also a patriotic symbol of Venice and prominently featured on the Venetian flag. Besides that of the lion, there are many other flags that belong to Venetian culture, like those representing certain areas within the city, the city's *scuole*, families, or other organizations. These flags, along with their flagstaffs and pedestals, were typically located in *campi* near the group that they represented. Since far fewer flags are flown today in Venice, the flagstaff pedestal is often the only remaining symbol of this tradition. The pedestals themselves contain decorative designs, as well as historical or religious inscriptions and icons. The pedestal consists of two structural elements, the base and the body. The body holds the wood or metal flagstaff above the ground and contains the artistic elements, while the base is the platform on which the pedestal body rests.

There are 55 flagstaff pedestals in Venice and the lagoon islands, three of which have been enclosed in courtyards and are no longer public. Of the pedestals located in Venice, only 35 contain flagstaffs. The majority of the pedestals are located in or near *campi*,

as churches and associated *scuole* are often the heart of each *campo*. Thirty-four of the pedestals are near waterfront, which can be attributed to the mercantile and military purposes of the flags they would have flown. In fact, two pedestals are located directly in the water within the *sestiere* of San Marco.

Flagstaff pedestals were created from a variety of materials and styles. Istrian stone is the most popular material used to make pedestal bodies, accounting for 76 percent of the pedestals in Venice. Some of the other materials used were bronze, Verona stone, and metal, respectively 11 percent, five percent, and four percent. Istrian stone was also commonly employed to construct the pedestal base, amounting to 75 percent of the total. Pedestals frequently contain artistic carvings; there are nine pedestals in Venice that display the winged lion of Saint Mark, most if not all postdating 1797. Other common themes are water, religious motifs, scuole, and familial coats of arms. Textual inscriptions are also often found on pedestals. Eleven percent of the pedestals in Venice have text concerning Italian Independence in 1866, and another 11 percent concern Venetian confraternities.

Currently, most flagstaffs in Venice are not and have not been used for many years. As a result, 17 percent are in poor condition and are unusable due to deterioration of the wood and pulley systems. Of the remaining 83 percent that are in good condition, only 20 percent are currently in use. In 1997, students at the Worcester Polytechnic Institute examined the pedestals to measure the severity of the damage that has been suffered. They found that the largest problem is cracking, affecting 26 percent of the pedestals. Grime affects 25 percent of pedestals; 15 percent are missing pieces. Other atrophic issues include rust, pitting, chalking, illegibility, and vandalism. The wooden flagstaffs, too, suffer from a large amount of missing paint and cracking. Frequently, cracking appears where there is no paint and the flagstaff material is exposed to the humid Venetian climate.

### Wellheads

Because Venice was cut off from reliable sources of fresh water, Venetians built underground basins to collect and filter rainwater. Their system of cisterns collected rainwater and retained it in a clay basin, which citizens could access. Wellheads capped these cisterns. Often, wellheads were festooned with carvings of saints, family crests, inscriptions,



**Figure 49: A flagstaff pedestal outside the Scuola Grande di San Rocco**



or other images important to Venetians; carvings of saints usually faced the nearest church. The decorative characteristics of wellheads ranged through the Carolingian, Byzantine, Gothic, Renaissance, and Baroque eras.<sup>38</sup>

Wellheads exemplified the city's culture and its love for art, as well as functioning as a barrier between the important water reservoir and sources of possible contamination. Wellheads functioned as protection for the water source by preventing animals from falling in and keeping floodwaters from contaminating the drinking water. It was also common to have a small hollowed-out bowl near the base of the wellhead, which was kept full for animals to drink.

As the city grew, so did the number of wellheads. They were typically located in the center of *campi*, and were always a place for socializing and interacting with neighbors. Photographs dating to as late as the nineteenth century show women washing clothes on the steps of wellheads, children playing nearby, and men hauling up the water. With the completion of an aqueduct from the mainland in the late 1800s, wells lost their function and were quickly abandoned.<sup>39</sup>

Istria stone is a type of limestone that has a gray-green or yellowish color. Lengthy exposure to the atmosphere causes the stone to obtain a whitish appearance through a process called "whitewashing." Unfortunately, this also makes Istria stone a prime candidate for exfoliation. Verona marble is a sedimentary rock composed of organic limestone and fossils. It has either a reddish or whitish color depending on the carbon compounds it contains. All but two of the 217 public wellheads cataloged are composed exclusively of Istria stone, Red Verona marble, or White Verona marble. Istria is stone the most common material, accounting for 79 percent of the wellheads cataloged. Istria is followed by 14 percent Red Verona marble, and seven percent White Verona marble.<sup>40</sup>

Sixty public wellheads are located on the lagoon islands of Murano, Burano, Torcello, Lido, Malamocco, San Pietro in Volta, Portosecco, Pellestrina, and Chioggia. Rizzi originally cataloged 231 public wellheads in the *sestieri* of Venice (50 in Cannaregio, 58 in Castello, 20 in Santa Croce, 23 in San Polo, 48 in San Marco, 29 in Dorsoduro, and 3 in Giudecca).

### Fountains

There are many types of fountains throughout Venice, some mass-produced and others unique and handcrafted. In 2004, a WPI project team gathered data about fountains and calculated that all the fountains in Venice collectively dispense about 135,867,600 liters



**Figure 50: Wellheads and fountains, found in *campi* all over Venice, were and still are places for animals and humans to get water.**



**Figure 51: A working fountain dispensing water in Cannaregio.**

<sup>38</sup> Bender, Michael et al. *The Forgotten Art of Venice*. 2000. Pg 20 – 24.

<sup>39</sup> Blackwell, Lewis et al. *Preserving Venetian Wellheads*. 2000. Pg 16 – 18.

<sup>40</sup> Ibid, Pg 26 – 27.



(41,307,500 gallons) of clean, potable water every year. The team also calculated a condition rating for each fountain, which included a multitude of factors like rust, algae, graffiti, surface damage, grime, and missing pieces. The team formulated an algorithm based on the condition rankings, subsequently determining the overall damage ranking of each object.<sup>41</sup>

In Venice, fountain ownership is marked by the lack or presence of a service panel. Fountains that have a panel are owned by the city; the panels are installed by VESTA, a public works contractor, to keep track of the amount of water used for billing purposes. VESTA owns outright the fountains without a panel. The city owns 60 percent of the fountains, and VESTA owns the remainder. However, 70 percent of VESTA's fountains are functional, while only 60 percent of those owned by the city are. The question of ownership is important to those wishing to pursue restoration, or wanting to report a broken or unserviceable fountain.

## Damage



**Figure 53: Exposure to the elements can wear down the hardest stone, rendering it illegible.**

Public art, because its ownership is ambiguous and it is usually exposed to the elements, endures daily threats from a variety of different sources. The Venetian climate is a hostile environment; art is exposed to salt spray, direct sunlight, high humidity, and erosive factors. Venice experiences freezing temperatures in wintertime. Liquid water that has entered porous stone can freeze then crystallize and expand, often producing a cascading effect of cracks throughout the stone.<sup>42</sup> In other seasons, high humidity and the warmth of the sun combine to cyclically hydrate and dehydrate the stone on a daily basis, increasing the stresses upon it and, consequently, its rate of erosion. Bacteria, algae, and other organisms that thrive in damp environments have also made homes on many pieces of outdoor sculpture, and their byproducts are typically corrosive in nature.

For centuries, Venetian households and *vaporetti* burned dirty wood, coal and oil, causing black grime to accumulate on white



**Figure 52: Wellheads, in public places and no longer actively used, are prime candidates for graffiti and abuse.**

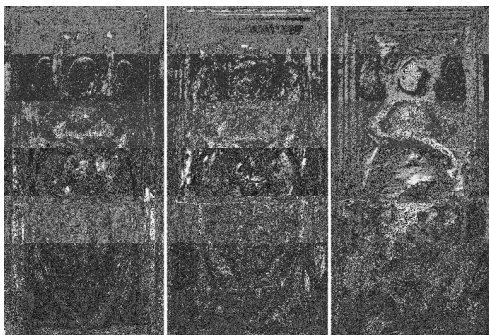
<sup>41</sup> Kelley, Aaron et al. Public Art Preservation in Venice: Non-public Wellheads and Fountains. 2004. Pg 21.

<sup>42</sup> Bender, Michael et al. The Forgotten Art of Venice. 2000. Pg 185.

marble surfaces; much of it still present today. Although Venice now burns exclusively natural gas and boat engines are held to increasingly strict emissions standards, mainland industrialization has had a negative effect on Venetian public art. Venice is fortunate enough to enjoy prevailing onshore winds, but it is not immune to acid rain and fog, both of which cause the deterioration of marble and other similar materials. As erosion occurs, the outer surfaces of sculptures are chemically altered, eventually detaching and falling off completely.

Unfortunately, the greatest source of damage to public art is human-related. Neglect, theft, disregard, and vandalism have all had significant roles in the accelerated deterioration of many objects in the Venetian public art collection. In the past twenty years, 49 pieces of the original documented collection of public art in Venice have disappeared. Routinely, objects are removed behind scaffolding during renovations, only to never be replaced afterwards.

People sit on public wells and kick their feet against them, spray graffiti on sculptures, touch statues, all without consideration of the fact that many pieces of outdoor sculpture in Venice are as important, historically and artistically, as objects found in museums or art galleries. Venetian utilities have strung up wires, cables, and drainage pipes in front of public art pieces, sometimes attaching infrastructure directly to the sculptures. One hundred and eighty pieces are affected by this particular problem.<sup>43</sup>



**Figure 54: The decay of a piece of outdoor sculpture in Venice, once depicting an angel but no longer recognizable.**

Perhaps the ignorance stems from perception; if an object is in a public space, is already visibly degraded, and has no owner nearby to abscond visitors, tourists and Venetians alike will take public art for granted and continue to abuse it.

With the wealth of information that has been collected over the years concerning public art, little action has been taken to protect these precious pieces. Data collection has, at best, brought us to this question: should Venetian public art be restored?

This is a relevant argument that can be defended from both perspectives. Those in favor of public art restoration would agree that it is

necessary in order to preserve Venetian heritage and culture. In some cases, public art contains historical information that would be lost forever if the pieces were allowed to deteriorate. Furthermore, public art that has existed for centuries is a testament to the accomplishment of the artist; it has great intrinsic value to the city community, and its presence will benefit future generations of Venetians and tourists alike.

Those against the restoration of public art have strong arguments as well. For instance, botched restoration jobs often negate all good intentions, and cause irreversible damage and loss. In such cases, the original intent to preserve is canceled out by poor methods, usually utterly destroying a piece of sculpture. There are also many pieces that have deteriorated to such a degree that repairing them would be a fruitless endeavor. Italian restoration philosophy excludes the possibility of replacing features that have been lost from the original work, which applies to many pieces of Venetian public art. If a piece cannot be restored entirely, then, some feel it is best left alone.

Public art needs to be preserved. The sheer number of pieces alone, constituting one of the world's largest collections of outdoor sculpture, justifies the expense and sometimes

<sup>43</sup> Elbag, Mark et al. *Preservation and Restoration of Venetian Public Art*. 2003. Pg 21.

hassles of restoration. Public art in Venice plays an important role in the lives of Venetian citizens, and restoration is crucial to maintain the city's unique character and legacy.

### **Restoration and Preservation**

Current preservation techniques include treatments to stone – the material that makes up most of if not all the pieces of public art. The ultimate goal of stone preservation is to protect it from moisture by sealing the pores that exist on the surface of the object. If the object is not fixed in place, it can be detached from the wall and immersed in a solvent to seal the stone's pores. More often than not, however, the pieces are mounted on the side of buildings, and removing them would do more harm than good. In these cases, the restorer is limited to a paint or spray application. This only applies to the exposed portions of the piece; some faces are inaccessible, and many have parts that abut the building to which they are mounted, occasionally leading to further structural damage rather than conservation. The damage happens during freeze and thaw cycles that happen naturally with the changing seasons, when the moisture contained within the object changes state and causes the piece to crack or even separate from the building to which it is attached. Moisture that seeps in to the inaccessible face is not able to escape because the front of the object is sealed. All public art is exposed to nature; hence, the only useful techniques for conserving public art are comprehensive cleaning and protection from the elements as much as possible.<sup>3</sup>

There are other preservation techniques used for more seriously damaged pieces (e.g. a break in the stone). When the broken piece is small and relatively lightweight, adhesive is applied and the piece is fixed back in place. If the break is large and heavy, a metal dowel must be used to hold the weight of the piece, in combination with an adhesive. For this type of conservation, restorers must use non-corrodible metal, or else as the metal corrodes, it will split the break open. A copper alloy called Delta metal is commonly used in cases like this.

Organizations including UNESCO, Save Venice Inc., and the WPI Project Center have initiated conservation efforts, notably establishing criteria for the condition of stone pieces. These span many categories including cracking, flaking, chalking, biological growth, grime and human impact. The data gathering methods of WPI students include photography, compiling catalogues and datasets, systematic sweeps of the city and cross-referencing their findings with other organizations and catalogs.

### **Sidebar: The Lion of Venice**

The winged lion has long been a traditional symbol of Venice. It is one symbol of Mark the Evangelist, who has been the city's patron saint ever since his remains were taken from a tomb in Alexandria, Egypt, and brought to Venice in 828 AD. Venice's original patron saint had been St. Theodore, a soldier-saint perhaps best known for battling a dragon (or, as a statue of him in Venice depicts it, a crocodile), but as Venice grew and became an important player in world affairs, it was felt that a more prestigious saint was needed. And so, St. Mark was chosen.

The lion of Venice is usually depicted with its paw on an open book that contains the text "Pax tibi, Marce, Evangelista meus." This Latin phrase translates as "Peace be upon you, O Mark, my Evangelist." Venetian legend has it that, while visiting the region of Italy that would later become the Veneto, Mark was approached by an angel, greeted with those words, and told that the Venetian lagoon would be his ultimate resting place. The actual story is most likely as described above, with the Venetians taking it upon themselves to fulfill the angel's prophecy (which they probably wrote themselves, too).

Interestingly, during times of war, the lion was depicted with a sword in one paw and the book, closed, safely kept under the other. Other depictions sometimes show a halo about the lion's head, the words on the book abbreviated to their initials, and the lion *in moleca* (showing only the head, top of the body, and paws). As one might expect, the lion could be found everywhere throughout the city – as statues on buildings, carved into wellheads, in *patere*, and every other place imaginable.

After the republic fell following Napoleon's invasion, however, over 1,000 lions were removed throughout the city in an effort to suppress Venetian pride. A



**Figure 55: A lion on the wellhead of Lazzaretto Nuovo, an island in the lagoon, which never got erased thanks to its secluded location.**

Venetian stonemason was contracted to carry out their removal, but he did a poor job (undoubtedly on purpose), overlooking many of the lions in the city. The ones that did get erased left behind empty decorative panels on whatever they had previously adorned, something one can still find throughout the city today.

### **Sidebar: Venetian Church Floors**

The city of Venice was founded in the fifth century, developing from a group of small island communities that each centered on a local church. From the beginning, in an effort to preserve their heritage and culture, Venetians buried priests and nobility within these churches. As time went on, this practice became routine and was expanded to include any member of the community with the appropriate resources or personal ties. Napoleon, after conquering the Venetian republic, abolished this practice due to health concerns. To this day, however, Venice exists with many of its original churches and the artifacts contained therein.

Centuries of burials and the gradual subsidence of the city (and consequent construction of new, higher floors and pavements) have led to the stratification of the church floors, many now containing several layers of artifacts. Beneath the current surface of these floors lie hundreds of items that exist as an historical record of Venetian culture and tradition – moments frozen in time. These artifacts include tombstones, plaques, and inscriptions. The earliest "ledger" stones date back to the 11<sup>th</sup> century, covering the tomb, allowing access to the grave, commemorating the family, and displaying inscriptions and biographical information – age, date of death, and occupation – about the deceased.

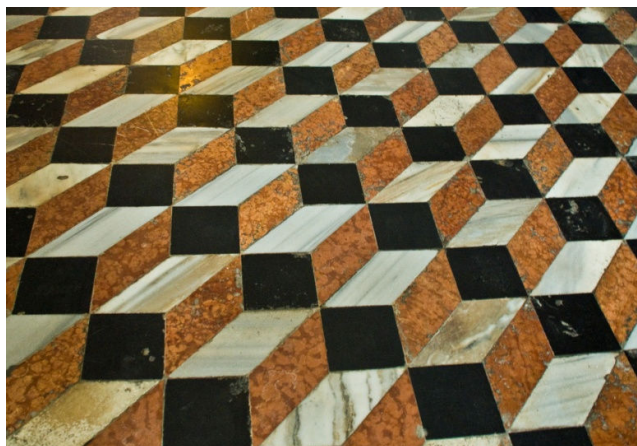
A lack of burial space in the 14<sup>th</sup> century led the Venetian government to adopt different entombment methods. Sealant that had originally lined the bottom of tombs was replaced, either by wooden planks spaced three centimeters apart or an arrangement of bricks that did not use mortar. In both cases, space was left to allow the natural passage of water that came with the tides. As the water passed through, the human remains within the grave decomposed and eventually were taken away by the tides – over several years, this action would free space that was needed for future burials. This practice not only caused significant damage to the floors, however, but was also eventually outlawed by Napoleon in the early



19<sup>th</sup> century to prevent disease transmission during the warm summer months. Since the Napoleonic conquest, all burials have taken place on the nearby island of San Michele, which still exists today as Venice's main cemetery.

The rich history contained within Venetian church floors is threatened by two forces. The first and foremost is water damage – every structure in Venice is susceptible to the water damage that accompanies the ever-rising tides. Church floors are especially susceptible because many of the artifacts are contained on or below the surface of the floor, much lower than the treasures on the walls that most conservation efforts tend to preserve first. Canal water often has corrosive properties, and it causes deterioration each time it comes into contact with the floors. The second threat to church floors is foot traffic; the more usage a church sees, the more wear and tear is exerted on the floor. Over time, foot traffic can be very damaging to a floor, wearing down deeply-engraved inscriptions to complete illegibility.

In 1987, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) declared the entire city of Venice a site of extreme cultural importance. In that same year, the Worcester Polytechnic Institute (WPI) in Worcester, Massachusetts, USA, launched the Venice Project Center (VPC). In conjunction with the *Soprintendenza dall'Archeologica* (Archeological Superintendent) and the VPC, undergraduate students from



**Figure 56: An intricate inlaid marble floor in a Venetian church.**

WPI have been studying Venetian churches since 2000. Their work has produced some of the most extensive data in existence about Venetian church floors.

Data collection has fallen into three main categories, the first being "Art, Designs, and Materials." The second involves all measurements taken within the churches, and the third is the actual evaluation of the conditions of the floor.<sup>44</sup> There have been a total of 770 artifacts and 308 floor quadrants surveyed. The text of each artifact has been transcribed, and useful historical and biographical information was extracted from the artifact inscriptions. Artifacts that have names and appear to be tombstones have been identified as such, and names, dates of death, age at death, and professions have been extracted when the information was available. Complete lists of translations are available in WPI's database.<sup>45</sup>

Seventy churches in Venice and its lagoon have yet to be studied. It is very likely that many of these churches have artifacts in their floors, and it is important that their information be recorded in an effort to contribute to Venice's rich and diverse historical record.<sup>46</sup>

<sup>44</sup> Blanchard. An Analysis of the Archaeological Potential of Venetian Church Floors, Pg 26.

<sup>45</sup> Ibid. Pg 37.

<sup>46</sup> Ibid. Pg 66.



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